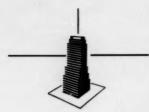
THE AMERICAN PSYCHOLOGIST

THE AMERICAN PSYCHOLOGICAL ASSOCIATION, INC.



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Part I of a 7-Volume inquiry into the status and tendency of psychological science conducted by more than 80 distinguished theoretical psychologists and sponsored by the American Psychological Association.

PSYCHOLOGY: A STUDY OF A SCIENCE

Edited by Sigmund Koch

Department of Psychology
Duke University

This monumental seven-volume work represents the contributions of over 80 noted authorities. Their analytic essays consider major theoretical formulations of recent importance, and the structure, mutual interrelations and associations with other sciences of the principal areas over which psychological research is deployed.

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THE AMERICAN PSYCHOLOGIST

Journal of the American Psychological Association, Inc.

Volume 13

July, 1958

Number 7

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ROGER W. RUSSELL, Editor Advisory Editors: STUART W. COOK, ANN MAGARET GARNER, NEAL E. MILLER
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PROGRAM OF THE SIXTY-SIXTH ANNUAL CONVENTION OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION

AUGUST 28-SEPTEMBER 3, 1958, WASHINGTON, D. C.

PAPERS AND SYMPOSIA

THURSDAY MORNING, AUGUST 28

Division 7. Studies of Parent-Child Interactions 9:00-10:50. Pan American Room, Statler JACOB L. GEWIRTZ, Chairman

9:00. A method for measuring maternal care. HARRIET L. RHEINGOLD, National Institute of Mental Health.

A method for measuring maternal care by direct observation is proposed in which the actual caretaking operations of the mother are recorded as they occur in their natural setting. This method could yield measures of maternal care in different species, of different kinds of maternal care within a species, and of the interaction between maternal and child behavior. As a first test, the method was used to measure differences between home and institutional care of three-month-old infants. The results showed that home infants received 4.5 times as much care, with even greater differences occurring in kinds of caretaking activities.

9:10. Some correlates of parental developmental expectancies. IRVING TORGOFF, Merrill-Palmer School.

Beliefs regarding temporal nature of behavioral development were studied using a 4-part questionnaire. "Earliness" or "lateness" of parents' "developmental timetable" was found to be related to class and sex of parent, the behavior's significance to parent-child relationship, and sex of the child. Working-class mothers (N=10) believed it appropriate both to (a) induce children to master more mature levels of behavior and (b) grant autonomy to children, at an earlier age than did their husbands. Middle-class mothers (N=10), while "inducing" earlier, granted independence later than their husbands. Different timetables for boys and girls were more frequent

among (a) working-class than middle-class parents, (b) fathers than mothers. Girls were usually accorded the "earlier" timetable. Relevance of developmental timetable to parental "influence behavior" is discussed.

9:20. Parental coerciveness, child autonomy, and peer group role at school. Lois W. Hoffman, Sidney Rosen, and Ronald Lippitt, University of Michigan, Marquette University, and Center for Advanced Study in the Behavioral Sciences.

It was predicted that boys who experience high parental coerciveness but who also are allowed high autonomy will be more successfully self-assertive in their peer group. They will make more attempts to win influence, intellectual achievement, and love, and their efforts will be rewarded. The theory behind this prediction states that parental coerciveness provides the motive for self-assertion, while autonomy both softens any hostility coerciveness might engender and fosters the development of skills and self-confidence, thereby making successful self-assertion possible. Statistically significant findings based on 217 elementary school boys are reported.

9:30. Parental power assertion and the child's social behavior. MARTIN L. HOFFMAN, Merrill-Palmer School.

It was hypothesized that influence techniques asserting the parent's power over the child without qualification (i.e., no explanations or compensatory gratifications given) clash with the child's closure and autonomy needs; hence, their frequent use engenders hostile, rebellious, and assertive tendencies which are displaced in more permissive situations and especially toward such low-power persons as peers. Parental influence technique data were obtained from fathers' and mothers' descriptions of a full day's interaction with the child; child behavior

data, from nursery school observations. The findings, especially regarding mothers' unqualified power assertive responses to noncompliance, support most of the hypotheses.

9:40. Preschool-age socialization and maternal control techniques. Boyd R. McCandless, Carolyn Balsbaugh, and Hannah Lou Bennett, Iowa Child Welfare Research Station and University of Hawaii.

Conflict and dependency were observed for 75 minutes each for 58 University of Hawaii preschoolers. Their mothers were interviewed about their role in their children's most recent two conflicts. Mothers reported more moderating and explanation during daughters' than sons' conflicts. Toward teachers, girls showed more total and emotional but not instrumental dependence than boys, and more often sought teacher help when in conflict. Boys defended themselves more against aggressors, less often changed activity following aggression (particularly to solitary activity), and were more task oriented. For both sexes, popularity and aggressiveness in initiating and resisting conflicts were positively associated.

9:50. Maternal influences on early IQ scores. JE-ROME KAGAN AND HOWARD A. Moss, Antioch College.

One possible reason for the only moderate correlations obtained between IQ scores under four years and those at school age (r) in the .50's) may be that early maternal concern with intellectual development facilitates early IQ scores much more than it does later ones. The correlation between maternal concern with intellectual development during the child's first three years and the child's IQ at ages 3 and 6, respectively (with mother's IQ held constant), was $+.41 \ (P < .01)$ and +.08 for 59 boys and +.16 and +.09 for 40 girls, suggesting that maternal acceleration facilitates the early IQs of boys.

10:00. The self concept: Its relationship to parental and peer acceptance. Albert W. Silver, Wayne County Juvenile Court Clinic.

To investigate whether levels and consistencies of self concepts correlate positively with parental and peer acceptance, 56 male adolescents completed self-concept rating scales, a defensiveness measure, and sociometric scales. Measures of parental acceptance were obtained and correlations between measures were computed. The results indicate that level and stability of self-concept ratings are significantly associated with paternal acceptance and to a lesser, but significant degree, with maternal acceptance and with perceived measures of peer acceptance, but not

with actual measures of peer acceptance or with accuracy of social perception. Nullifying age and intelligence differences left experimental findings essentially unchanged.

10:10. Factors in parental behavior and personality as related to problem behavior in children. Wesley C. Becker, Donald R. Peterson, Leo A. Hellmer, Donald J. Shoemaker, and Herbert C. Quay, University of Illinois.

Fifty-seven parent pairs, half with problem children, half without, were individually given the Guilford inventories, an IQ test, and an interview which permitted rating of 17 Fels Parent Behavior scales and of the problem behavior displayed by their children. Two factor analyses were completed to orthogonal simple structure, one with 46 mother-and-child variables and one with 46 father-and-child variables. Comparisons are made between: mother and father behavior patterns, questionnaire factor scores and parent behavior factors, parent behavior and child problem behavior. The role of the father in relation to child problem behavior was found to be particularly important.

Division 8. Leaders and Subordinates

9:00-9:50. South American Room, Statler ELIZABETH G. FRENCH, Chairman

9:00. A study of the motivation of leaders, followers, and isolates in a group of delinquent boys. ROBERT G. MILLIGAN, Psychiatric Institute of the Municipal Court of Chicago.

The research is directed at the investigation of how some motivational tendencies of institutionalized delinquent boys might be related to their sociomctrically determined status as leaders, followers, and isolates. The consideration of motivation was narrowed to an examination of their tendency to identify and project while contacting, reacting to, and interacting with human figures and objects in various situations provided in a number of TAT cards. A statistical evaluation of the TAT results indicated that isolates tend to manifest a significantly greater degree of unusual, incongruous, and even pathological projection in such situations. The conclusion is that this is an impediment to social participation and is a factor in determining the relatively lowchoice-status of isolates in this group of subjects.

9:10. Effects of power on rated and actual success as a leader. Bernard M. Bass and Austin W. Flint, Louisiana State University.

Control (the ability to reward others) was expected to yield successful leadership, but only when members were highly motivated. Members of 51 groups of 5 with highest control, under conditions of high motivation attempted more leadership, were perceived by their colleagues to be more successful, overestimated their own esteem, but were actually not more successful according to objective indices of success. Effects of problem difficulty and group practice were also systematically examined.

9:20. The social psychological consequences of technological change in three industrial shops. Gerald Goldstein and Howard Baumgartel, University of Kansas.

The major factors identified with technological change in previous research are: leader behavior as a conditioning variable, changes in job status, defensive group norms, interruption of established interpersonal relations, and work structure influences on group formation. A natural field experiment was designed to explore the relationships among such variables in a major industrial reorganization and relocation. Data were obtained from interviews, company records, and questionnaires administered before and after the changes. The findings indicate that in this reorganization a deterioration in worker-foreman relationships and a narrowing of personal aspirations were associated with lowered job status, decreased freedom, and increased pressure.

9:30. Effect of interaction with an authority figure upon quality of performance, JAY JACKSON AND HOWARD ROSENFELD, University of Michigan.

The effect of various patterns of interaction with an authority figure upon a subordinate's performance was studied in a business office of a utility company. Measures were obtained on three different dimensions of interaction between 36 female employees and their immediate supervisors. The interaction between each employee and her supervisor was examined in relation to objective measures of the worker's performance. Findings lead to the conclusion that when an authority figure initiates a lot of fact-giving interaction with an experienced subordinate, in a context of close, impersonal supervision, the latter reacts with poorer performance, attributable to decreased motivation to perform well.

Division 12. Psychosomatics

9:00-9:50. Federal Room, Statler
HERMAN B. MOLISH, Chairman

9:00. The peptic ulcer personality: A Q technique investigation of three ulcer diagnostic subgroups. Theodore H. Wohl, VA Hospital, Cincinnati, Ohio. This research was designed to furnish a quantitative evaluation of the ulcer patient: his drives, defenses, and environmental interaction. Subjects were three patients diagnosed gastric ulcer, duodenal ulcer, and functional dyspepsia. Emphasis was on psychic behavior as revealed by the patients themselves, by reference to dynamic theory, and by three diagnostic-evaluative techniques as utilized by an internist, psychiatrist, and psychologist. Under the rubric of *Q* methodology, results were obtained ranging from almost complete verification of postulated hypotheses to complete nonverification. Hypothesized development of an ulcer personality type was not achieved although certain diagnostic-evaluative types were established.

9:10. Some psychological correlates of six somatic disturbances. Herbert C. Kelman, Franz Alexander, and Morris I. Stein, Harvard University, Mt. Sinai Hospital, Los Angeles, and University of Chicago.

Earlier studies have postulated personality patterns characteristic of patients with specific diseases. For each of six diseases, statements describing some aspect of life history or current behavior which forms part of the postulated pattern were developed and combined into a checklist. Checklists were completed by naive judges after they read transcribed interviews held with patients in each disease category. It was thus possible to test whether statements hypothesized for a particular disease tend, in fact, to be more characteristic of patients with this disease. The results confirm the hypothesized pattern for three of the disease: asthma, thyrotoxicosis, and ulcer.

9:20. Hypnotically induced conflict in relation to repression, psychosomatic reactions, and antisocial behavior. Joseph Reyher, University of Illinois. (Sponsor, Charles W. Eriksen)

Posthypnotic conflict generated by the activation of aggressive impulses produced psychopathology in normal subjects. In response to stimuli designed to elicit the aggressive impulses, subjects developed various degrees of repression. The degree of repression was found to be related directly to the proportion of psychosomatic reactions and inversely related to subjective reactions. Relatively poor "repressors," who acted upon the aggressive impulses, appeared to be able to repress conscience in contrast to relatively good "repressors," who did not act upon the aggressive impulses. The latter subjects appeared to repress the aggressive impulses because of their inability to repress conscience.

9:30. Sexual changes after adrenalectomy: The role of adrenocortical androgens in female sexuality. Sheldon E. Waxenberg, Marvin G. Drellich, and Arthur M. Sutherland, Memorial Center for Cancer and Allied Diseases, New York City.

Interviews explored changes in sexual behavior of 29 women after ablation of ovaries and adrenal glands for metastatic breast cancer. Fourteen of 17 patients reporting sexual desire before surgery experienced decreases, the majority losing all desire; all 17 sexually active patients reduced frequency of intercourse; and 11 of 12 responsive in intercourse experienced decreases in responsiveness, usually total loss. Sexual variables decreased despite palliation of symptoms and/or objective remission in the majority of patients. Ovariectomy alone does not usually disrupt sexual behavior; hence, adrenocortical sex hormones, predominantly androgenic rather than estrogenic, appear to exert important influence on female sexuality.

Division 12 and Association for Psychologists in Medical Schools. Symposium: A Broad Look at Comprehensive Medicine

9:00-10:50. Ballroom, Statler

JOHN EBERHART, Chairman

Participants: WILLIAM A. STEIGER, HERMAN NIE-BUHR, JR., AND KENNETH HAMMOND.

Division 8. Personality Patterns

10:00-10:50. South American Room, Statler Frances M. Carp, Chairman

10:00. College smoking and personality profiles. DANIEL S. P. SCHUBERT, University of Chicago. (Sponsor, Desmond Cartwright)

MMPIs and smoking questionnaires were administered to college students. Psychoanalytic theory suggests the hypothesis: manic-depression varies directly with smoking; t tests revealed support for this hypothesis. Suggestive differences were found on the Pd scale where the smokers scored higher than the nonsmokers with a p < .01, and on the Si and D scales where the men smokers scored lower with a p < .10. Analysis of reasons for starting smoking, satisfactions gained therefrom, and reasons for wanting to stop will be discussed. Interpretation of the support of the hypothesis and suggestive differences on other scales will be presented.

10:10. The relationship between interpersonal interaction in marriage and developmental level of perceptual functioning. STANLEY E. KADEN, Clark University. (Sponsor, Leslie Phillips)

This study is concerned with the relationship between social behavior and cognitive function. The specific variables selected for analysis were interpersonal interaction in marriage (considered to be a primary aspect of social behavior) and perceptual functioning as manifested in the Rorschach test. Both variables were conceptualized within the same formal scheme, based upon principles from the developmental psychologies of Werner and Piaget. A significant positive relationship was found between level of maturity of interpersonal interaction in marriage and developmental level of perceptual functioning on the Rorschach test.

10:20. An experimental investigation of the psychodynamics of the "previous existence" fantasy. Edwin S. Zolik, Marquette University.

This study reports results obtained with four male volunteers for an experiment in hypnosis. In the first hypnotic session the subject was regressed to a "previous existence"; in the second, without age regression, the principal character of the "previous existence" was investigated. The results sustain the hypothesis that the "previous existence" fantasy is based upon and reveals significant interpersonal relationships and major motivational sources. In one case it is based on a major unresolved emotional conflict. Psychodynamic relationships between the principal character of the "previous existence" and the subject are revealed, in addition to relationships between the "previous existence" fantasy and independently analyzed TAT protocols.

10:30. The projective interpretation of early recollections. Louis A. Berman, University of Illinois. (Sponsor, Harold Klehr)

To test the Adlerian principle that easily recalled childhood memories provide a measure of the individual's present personality, a written set of early recollections, obtained under controlled conditions, was analyzed for age and sex differences and also correlated with personality test scores drawn from the same population of 115 school children (53 11-year-olds, 62 17-year-olds). The personality test consists of an original self-rating exercise that can be objectively scored on "good adjustment-maladjustment" dimensions. Statistically significant group differences and individual differences are reported, and these findings are related to their implications for personality theory.

Division 8. Symposium: Changing Attitudes and Perceptions of Adult Offenders by Individual and Group Treatment

10:00-11:50. Congressional Room, Statler EMIL G. WINKLER, Chairman

Participants:

ABRAHAM FROEHLICH. The contribution of probation supervision toward the modification of certain attitudes toward authority figures: A comparison of the results of intensive and minimal supervision in producing change in attitudes in adult probationers.

ALEXANDER BASSIN. Effect of group therapy upon certain attitudes and perceptions of adult offenders on probation.

ALEXANDER B. SMITH. Analysis of interaction process and sociometric relations developed during group therapy with adult offenders on probation.

Division 12. Hostility, Self-Destruction, and Impulsivity

10:00-10:50. Federal Room, Statler SAUL ROSENZWEIG, Chairman

 Hostility and aversion for expressing hostility in neurotics and controls. H. J. WAHLER, VA Hospital, Knoxville, Iowa.

Freud assumed that the superego is stronger in neurotics than normals but that hostile tendencies are instinctual and of equal strength. With a choice task neurotics should select fewer disapproved hostile Rs than normals. This difference should be greater with human than nonhuman content. Mowrer assumed the superego is weaker in neurotics. Ss were required to report a meaningful sentence from sets of scrambled words, each providing a neutral and hostile alternative with relative desirability varied. The findings suggest that aversion for expressing disapproved hostility is equally strong in both groups and that hostility toward people is stronger in neurotics.

10:10. Displaced hostility in physically handicapped and nonhandicapped subjects. Bernard J. Somers, Institute for the Crippled and Disabled, New York City.

Frustration-aggression theory in general, the scapegoat theory of prejudice in particular, and the social psychology of the physically handicapped formed the basis for the hypothesis that physically handicapped Ss (amputees) would show greater displaced hostility than a comparable group of non-handicapped Ss. Extremity and direction of attitude

on six social attitude scales were employed as measures of displaced hostility. Eight out of eleven specific hypotheses supported the general hypothesis that the handicapped Ss would show more displaced hostility than the nonhandicapped Ss.

10:20. A theoretical approach to self-destructive processes. Lawrence L. LeShan and Marthe Gassmann, Institute of Applied Biology and New York City.

Self-destructive processes have generally been considered as individual types of acts (i.e. accident-proneness) or as outcomes of general factors such as a death-instinct. Neither approach has seemed to lead to useful insights. In this paper, these processes are treated as dynamic maneuvers designed to correct unsatisfactory interpersonal relationships. A classification of types of self destruction is made based upon what the person is attempting to do, or what is happening, as a result of inadequate relations with others. In focusing on these questions the hope is raised that we will be able to find answers which will enable us to offer therapeutic intervention.

10:30. An investigation of the concept of impulsivity. Bernard V. Verrill and Lawrence S. McGraughran, Bradley University and University of Houston.

Previous writers have made sweeping generalizations or utilized untestable assumptions in dealing with the concept of impulsivity. In this study, impulsivity was given a restricted definition relating to observable behavior. Subjects selected on the basis of this criterion were administered a large number of measures identified by other theorists as predictors of impulsivity. Since the results are equally good by using this restricted criterion, the utility of broad generalizations and assumptions are seriously quantioned. An attempt is also made to relate impulsivity to acquired motives or needs.

Division 16. Symposium: The School Psychologist at Work

10:00-11:50. Pan American Room, Mayflower KATHERINE E. D'EVELYN, Chairman

Participants:

WILLIAM M. CANNING. The school psychologist and the individual child.

George M. Kaiser. The school psychologist and the total school program.

PAUL L. HILL. The school psychologist and the community.

NORMA E. CUTTS. The school psychologist and research.

Division 7. Intellectual Functions

11:00-11:50. Pan American Room, Statler
IRENE E, HARMS, Chairman

11:00. The relationship of perinatal anoxia to intelligence and to neurological deviations in the preschool child. CLAIRE B. ERNHART, FRANCES K. GRAHAM, AND DON L. THURSTON, Washington University School of Medicine, University of Wisconsin School of Medicine, and Washington University School of Medicine.

In order to assess later effects of perinatal anoxia, newborns were classified at birth as anoxic or non-anoxic on the basis of events of the perinatal period. At the present time, 61 anoxic and 51 non-anoxic children have been reexamined at age three years by examiners without knowledge of the newborn classification. Children who had been anoxic at birth had significantly lower Stanford-Binet intelligence scores and lower vocabulary scores than control subjects. Analyses utilized statistical corrections for disproportionate representation of sex, race, and so-cioeconomic status. A significantly larger proportion of the anoxic group also exhibited suggestive or positive neurological signs.

11:10. Prematurity and perceptual-motor functioning: Preliminary report. M. Athol Hughes, M. SAM RABINOVITCH, AND ROGER BIBACE, Montreal Children's Hospital and McGill University.

This paper deals with part of a larger project concerned with the long term effects of presumably innocuous paranatal factors on the sensory-motor, perceptual, and conceptual organization of children. The focus of the present paper is on the relationship between parturitional prematurity and perceptual-motor functioning of children at two age levels. The results indicate that prematurity may have long range implications in the area of perceptual-motor development.

11:20. The relationship between the primary mental abilities and reading achievement at given developmental levels. James C. Reed, Wayne State University.

Multiple correlations between reading tests and intelligence tests administered to children in Grades I, IV, and VII show that there is a change in both the magnitude and the components of intelligence relating to a given task, and this change corresponds to the developmental stages of the child. Primary reading ability is independent of Thurstone's V, whereas advanced reading is highly related to it. There is an individuation of the intellectual processes with increased age, and complex reading tasks can

best be predicted by specific components of intelligence rather than by gross measures.

11:30. Relation of rigidity of set to intellect. ISAIAH GUTTMAN, Naval Air Technical Training Command. (Sponsor, G. D. Mayo)

Rigidity of set is defined as the degree of flexibility-rigidity in an individual's approach to problem solving. Measures of intellect are hypothesized as consisting of this rigidity of set plus factors of cultural and informational training. Relationships examined were: rigidity of set plus "cultural maturity" to Wechsler-Bellevue IQ and college gradepoint average, rigidity of set to a learned conceptformation rigidity, and generality versus specificity in rigidity. Results showed substantial correlations between rigidity of set with W-B IQ and also with learned concept-formation rigidity derived from partial reinforcement conditions. Rigidity of set and ethnocentric rigidity were uncorrelated.

Division 8. Achievement

11:00-11:50. South American Room, Statler IRVING E. BENDER, Chairman

11:00. Effect of task characteristics on the relation between achievement motivation and performance. Elizabeth G. French, Wright Air Development Center, Dayton, Ohio.

The study tested the hypothesis that the relation between achievement motivation and performance is greater the more difficult, and the less interesting, the task; that is, task ease and interest make achievement motivation less necessary for success. Results were positive for difficulty level but were reversed for task interest due to the markedly poorer performance of the low motivation subjects on the interesting task. These subjects, on the other hand, attempted significantly more task units than any other group. This suggests that the interesting task provided goals other than success for low motivation subjects and these goals interfered with performance.

11:10. n Achievement and test anxiety: Motives to approach and to avoid risky competitive situations. John W. Atkinson and George H. Litwin, University of Michigan.

Forty-one college men took 10 ring-toss shots anywhere from 1 to 15 feet from a target. On another occasion, the time they left a final examination in a psychology course was noted. Men who were high in n Achievement (French Test of Insight) took more shots from an intermediate distance and left the exam room later than men low in n Achieve-

ment. Men high in Test Anxiety (Mandler-Sarason Scale) took fewer shots from an intermediate distance and left the exam room earlier than men low in Test Anxiety. Results confirm hypotheses from theory of risk taking behavior.

11:20. Anxiety in academic achievement situations. RICHARD ALPERT AND RALPH NORMAN HABER, Stanford University.

This research concerns an appraisal of the adequacy of several current questionnaire-type scales (the Taylor, Welsh, and Mandler-Sarason scales), as well as the construction of an addition scale for the specific measurement of academic achievement anxiety. Two issues are considered: (a) the effectiveness of general versus situationally-specific anxiety scales and (b) an exploration of Mandler and Sarason's theory concerning the facilitating effect of anxiety for some individuals, by means of the construction of a scale which provides both a facilitating and debilitating anxiety score for each individual.

11:30. Expected goal utility and motivation under survival conditions. EDWIN J. THOMAS AND AL-VIN F. ZANDER, University of Michigan.

Consistent with recent work on related problems it is assumed that motivation to attain a goal varies positively with its expected utility, where the expected utility of a goal is conceived to be a joint function of the perceived instrumentality of the goal for mediating the attainment of the individual's other goals, and of the valence of the other goals. Four specific hypotheses based on the assumption were tested in a field setting using as data the subjective reactions and indications of performance of 459 military personnel undergoing training in survival. Hypotheses were supported by the findings.

Division 12. Personality Patterns

11:00-11:50. Ballroom, Statler

HERDIS L. DEABLER, Chairman

11:00. Communication patterns and their relationship to social and intellectual learning in early adolescence. Cecily Gardner Grumbine, University of Chicago.

Categories for studying communication patterns were derived from the attitudes individuals hold toward self and others. Using scales designed on such bases to rate responses on a paradigm of real-life interaction, attitudes of early adolescents were reliably determined. An instrument was developed which can be utilized clinically with confidence in its reliability for describing certain aspects of a subject's interpersonal relationship solely on the basis

of his verbal responses. Results indicate that (a) there is a significant relationship between attitude toward self and intellectual achievement and (b) a strong trend relating attitude toward others with success in both the social and intellectual spheres.

 Personality factors in motor learning. Oak-LEY S. RAY AND GEORGE J. WISCHNER, University of Pittsburgh.

College Ss differing in degree of extroversion, neuroticism, and manifest anxiety were studied in relation to performance on a rotary pursuit task. To test Eysenck's postulation that introverts dissipate reactive inhibition more rapidly than extroverts, reminiscence data were gathered on these groups. On original learning introverts were significantly better than extroverts. Low neuroticism and low manifest anxiety groups were significantly superior to corresponding high groups. Extroverts tended to show more reminiscence over longer rests but did not differ significantly from introverts. Results are related to Eysenck's formulations and to current theory relating drive to performance on various tasks.

 Psychodynamic patterns of specialized vocational choices. Gerard G. Neuman, University of Utah.

This paper presents some of the findings of a fiveyear study as they relate to the meaning of functioning as a physician in general and the particular meaning of specialty choices in medicine, such as surgery, internal medicine, psychiatry, obstetrics and gynecology, and general practice, have for the individual. The data are derived from a five-year broad clinical assessment study of 144 medical students, faculty members, and practitioners, resulting in 168 variables in the cognitive, attitudinal, and personality areas. Each of the patterns was compared with the rest of the sample on 167 variables by way of t tests resulting in patterns of similarities and differences. Clinical studies of individuals in the chosen subgroups allowed for elaboration of and validation of the meaning derived from the statistical results. These difference patterns between medical specialties and general practice, organic and psychological medicine, and internal medicine and surgery are discussed in terms of their indication as to their relative efficacy in providing ego strengthening organismic solutions for the individual.

11:30. Some relationships between verbal abstraction and word meaning in retardates. Belver C. Griffith and Herman H. Spitz, Edward R. Johnstone Training and Research Center, Bordentown, New Jersey.

High grade retardates are unlikely to achieve an abstraction, i.e. discover a characteristic common to three words, unless they would normally define two or more of the words in terms of the characteristic given as the abstraction. Thus, retardates seem to operate in the abstraction task with little or no knowledge other than the descriptive terms they immediately associate with the words presented them. These findings, first, suggest that abstraction in retardates is directly mediated by cues from verbal responses, and second, seem to parallel some of the results from studies of rigidity. Implications for training are discussed.

Division 12. Symposium: The Body Image and Brain Damage: A Critical Evaluation

11:00-12:50. Federal Room, Statler

LEONARD DILLER, Chairman

Participants:

SIDNEY WEINSTEIN. The psychophysical approach. HERBERT BIRCH. The sensory integration approach. ROBERT KAHN. The symbolic adaptation approach.

THURSDAY AFTERNOON, AUGUST 28

Division 8. Aggression

12:00-12:50. South American Room, Statler John S. Harding, Chairman

12:00. Social desirability and the expression of aggression under varying conditions of frustration. Joel Allison and David E. Hunt, Yale University.

The relationship between Edwards' Social Desirability Scale and the expression of aggression under varying conditions of frustration was investigated. The primary study employed a paper-and-pencil "situational test" consisting of four types of frustrating situations varying in two dimensions—motive strength and availability of an alternative response. The hypothesis that social desirability would be associated with non-expression of aggression was supported in all four variations. This relationship was not found in an additional study which specified the intention of the frustrating source. Therefore, the role of social desirability in suppressing aggression must be qualified by the nature of the situation.

 Personality factors in the readiness to express aggression. Philip Worchel, University of Texas.

Hypotheses relating self-ideal discrepancy and the readiness to express direct aggression following frustration were proposed for the present investigation. It was predicted that persons with low self-ideal discrepancy would be more likely to express direct aggression towards authority figures than those with high discrepancy. It was further predicted from the displacement hypothesis that Ss inhibited in direct expression of aggression would have a greater tendency to displace their aggression towards a figure similar to the instigator. A $2 \times 2 \times 2$ factorial design (sex, self-ideal discrepancy, and identification) consisting of a total of 64 Ss was used. Results confirmed the hypotheses of inhibition of aggression and self-ideal discrepancy. Displacement did not occur under the conditions of the present experiment.

12:20. The effect of socially learned aggression or submission on the mating behavior of C57 mice. Marvin W. Kahn, University of Colorado School of Medicine.

Hypothesis: Socially learned aggression and submission significantly affect the character of mating in male mice. Two groups were used. One was trained to be aggressive, the other to be submissive. Following training animals were placed in a pen with a female known to be in estrous. Their responses were recorded. Groups differed significantly in behavior and behavior latency. Aggressives responded only with approach behavior and all attempted mounting within 60 seconds. Submissives made only investigatory approach and only after great delay. Females responded significantly differently to each group. Females tended to run from aggressive males, but to pursue submissive males.

12:30. Authoritarian submission and hostility toward authority. John J. La Gaipa, U. S. Naval Personnel Research Field Activity, Washington, D. C.

Authoritarianism and hostility toward authority was explored by means of responses to humorous cartoons. This disguised method was used in order to present authority figures in situations characterized by aggression without unintentionally arousing ego defense mechanisms such as may occur when authoritarians rate leader-figures. The 160 fraternity students completed a specially developed authoritarian submission scale (AS) and also Q sorted 64 humorous cartoons. High AS scorers perceived less humor in cartoons showing aggression toward authority than low AS scorers. However, the reverse was found when ego involvement was increased. The change in the kind of humor perceived as funniest was significantly related to authoritarian submission.

Division 12. Hospitalization

12:00-12:50. Ballroom, Statler

MARY ALICE WHITE, Chairman

12:00. On the relationship between amount of hospitalization and self-assertion. Leonard Ull-Mann, VA Hospital, Palo Alto, California.

Test and retest MMPIs of 63 male, VA neuropsychiatric patients were scored for self-assertion (Gough "dominance" and Navran "dependency"). Self-assertion was significantly less at retesting. Through nine months, increased time in hospitals correlated negatively with self-assertion (N=32; rho = -.32). In 47 cases, 13 or more months separated the testings. Of these Ss, the 28 hospitalized less than half the time decreased in self-assertion significantly more than the other 19 cases. Lessened self-assertion probably is one effect of hospitalization. Since decreased self-assertion is also related to making some community adjustment, the relationship between amount of hospitalization and self-assertion is curvilinear.

12:15. Defective ego and social development as functions of prolonged institutionalization of children. RALPH W. COLVIN, Astor Home For Children, Rhinebeck, New York.

Extensive institutionalization of children and its concomitant, inadequate mothering, have been presented as having profound effects upon the development of ego strength and facility in interpersonal relationships. The present study investigates the interrelationships between the proportion of a child's life spent in his own home, foster homes, and institutions and various measures of ego development, social status, and psychopathology. Findings support hypothesis that real and foster home life enhance, and institutionalization hinders, ego development and social acceptability and that personality disorders are significantly associated with early and prolonged institutionalization.

12:30. A treatment orientation for chronic mental patients in a geriatrics service: An experimental study. Joseph M. Sacks, Irving Wolf, and Aaron S. Mason, VA Hospital, Brockton and Massachusetts General Hospital, Boston, Massachusetts.

One year's study of the effects upon 98 aged chronic mental patients of stabilized group composition and consistent association with specific members of nursing personnel indicates several positive changes: increased discharge rate; improved ward adjustment; and decrease in personality aberrations including diminution of motor disturbances, arrest of melancholy agitation and conceptual organization, and improvement in self-care and social responsibility.

Division 7. Social and Personality Development

1:00-2:50. Pan American Room, Statler LEON YARROW, Chairman

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1:00. Developmental capacities for socialization in puppies. D. G. Freedman, Orville Elliot, and John A. King, Roscoe B. Jackson Memorial Laboratory, Bar Harbor, Maine.

The developmental level of a puppy may determine the effect a limited amount of human contact will have upon its later capacity to form social relationships. The study was designed to determine whether early human contact for a period of a week would enable socialization to develop later in life. Puppies receiving human contact for weekly periods from 3 to 8 weeks of age tend to be tamer, easier to train, and less excitable than those which receive the contact before or after this period, or not at all. The study offers support to the "critical period" hypothesis.

1:10. Psychological health criteria among adolescents: A study of manifest and latent indicators. PHILIP W. JACKSON AND JACOB W. GETZELS, University of Chicago.

This research studies a group of adolescents who exhibit great discrepancies between personality levels and compares their performance on a number of variables with that of two groups exhibiting smaller discrepancies. The California Personality Test and a projective sentence completion instrument were the selection instruments. Subjects with "good" responses to the California but "poor" responses to the projective instrument were found to have more pathology on the Rorschach and to be deficient in numerical achievement. The group which performed poorly on both instruments differed only in being less preferred by teachers. Theoretical implications of these findings are discussed.

 A circumplex model for personality development. Earl S. Schaefer, National Institute of Mental Health.

The paper will present a parsimonious nomological network for the domain of social and emotional behavior of the child. Two-dimensional organizations of correlation matrices of behavior ratings for infants, nursery school children, grammar school children, and young adults show great similarity.

Each organization presents a continuous ordering of variables that conform to Guttman's law of neighboring. The two major axes resemble dimensions described by Osgood, Leary, and Eysenck. An antecedent-consequent relationship between a circumplex model of maternal behavior and a circumplex model of social and emotional behaviors will be discussed with reference to empirical studies.

1:30. Development of moral judgment and of the sense of justice in the years 10 to 16. LAWRENCE KOHLBERG, University of Chicago.

Interviews about hypothetical moral conflict situations were administered to 87 boys classified by age, class, sociometric status, and delinquency. After case study, a set of hypothetical developmental levels in moral thinking was constructed, focusing on formal characteristics considered by philosophical analysts and by Mead, Baldwin, and Piaget: 0-Obedience and punishment orientation. 1-Naive egoism. 2-"Good boy" orientation. 3-Authority maintaining orientation. 4-Legalistic orientation. 5-Conscience orientation. A "quasi-simplex" pattern of these level intercorrelations and an analysis of variance of age and group differences lent some confirmation to their general developmental character and to influences considered by the theorists mentioned.

1:40. An experimental investigation of suggestibility in terms of dependency behavior. Leonard Jacubczak and Richard H. Walters, University of Toronto.

Twenty-four children, 12 high-dependent and 12 low-dependent, were exposed to the autokinetic effect. Each child twice received suggestions, once from a peer and once from an adult. Half the subjects in each group received suggestions from the peer first, the other half from the adult first. Predictions based on the interpretation of suggestibility as a learned dependency response were partly confirmed. Adults were more effective as suggesters than were peers, and the order of exposure to adult and peer proved highly important. Differences between high-dependent and low-dependent children were, however, small and not statistically significant.

1:50. Life history correlates of delinquent and psychopathic behavior. Victor B. Cline and Arthur S. Wangrow, University of Utah.

A random sample of 80 recidivist criminals from the Utah State Prison were given an intensive life history interview focusing on parents' child rearing practices, discipline, sibling, religious, social, peer, and school variables. A control group matched for age, sex, intelligence, race, and socioeconomic background were given the same interview by the same interviewer and compared on 165 major and 619 subvariables. All codings, ratings, and judgments were made at the time of the interview. Analysis of the data yielded a number of variables which significantly differentiated the psychopathic and control samples. The implications of these in terms of parent-child interactions are considered.

2:00. Measures of the child's acquaintance range outside his neighborhood in communities differing in size. Charles T. Deeble and Herbert F. Wright, University of Kansas.

Measures of acquaintance by 6-11-year-old children with characteristics and personnel of activity settings outside their immediate neighborhoods in City and Town, comparatively large and small Midwest American communities, are drawn from elicited and spontaneous comment made during community automobile tours and from collateral interviews. Measures of amount and/or proportion of known items indicate better acquaintance in Town with homes, business establishments, adult job holders, church groups, and personnel of church and recreational settings. The absolute numbers of known adults among school personnel is greater in City. Procedures and results are discussed in the context of a continuing larger study of children's habitat and behavior in communities differing in size.

2:10. Children's miniature constructions of their communities as models of their habitats in communities differing in size, Herbert F, Wright AND WILLIAM M, Weist, University of Kansas.

Partial replicas of their communities were constructed by 6-11-year-old boys of City and Town, Midwest American communities of medium and small size. A running commentary was elicited from the child. Analysis of represented activity settings and objects and of their verbally ascribed attributes discloses City versus Town differences in formal properties of the replicas, in their content, and in relationships of certain form and content variables with age. Implications for description of children's habitats in City and Town are considered in relation to congruent results of field procedures. The research is part of a continuing study of children in communities differing in size.

Division 8. Interpersonal Relations

1:00-1:50. Congressional Room, Statler N. L. Gage, Chairman 1:00. The effect of personality upon extreme mutual choice and rejection in domiciliary living groups. Stephen H. Davol, VA Center, Bath, New York.

Sociometric ratings, using the Syracuse Scales, and personality scores from the Cattell 16 PF were obtained for a group of domiciliated veterans. When the relationships between pairs of personality variables present in dyads of extreme mutual preference and rejection were compared, a significantly larger total number of comparisons supported the hypothesis that, if the negative or positive relationship between pairs of personality variables were determinants in the formation of extreme mutual preference, then the opposite relationships of the same pairs of personality variables tended to determine extreme mutual rejection, or else the relationships tended to be not operative in mutual rejection.

1:10. An experimental approach to the problem of infatuation. ALICE C. THOMPSON, Los Angeles State College.

A brief inventory embodying principles of background deprivation or rejection, personality deviation in areas of assertiveness, social mobility, and anxiety, and number of times the individual has been involved in infatuations substantiated previous studies of the blunted affect of deprived children and unstable affect of rejected children. It further revealed a more striking rejection pattern in the infatuated group (74) than in the control group (268) and sex differences as follows: males—lower anxiety level, more social mobility, more assertiveness, less guilt, and more sibling rivalry; females—higher insecurity, anxiety, overprotection, social withdrawal, and a plaintive search for love.

1:20. Measuring accuracy of social perception: A methodological study. WALLACE P. WELLS AND DONALD C. PELZ, University of Michigan.

To determine whether or not supervisors possess a unitary ability which can be labeled "accuracy of social perception," supervisors in an electronics company were asked to fill out 9 items on a questionnaire the way they believe each of two subordinates to have done; discrepency between prediction and subordinate response were used as measure of accuracy. Accuracy of social perception appears to be limited to specific areas. Subordinates rate their supervisors differently depending on the kind of item on which they are accurate. Accuracy on role-relevant attitudes relates positively to ratings by subordinates; accuracy on "private" attitudes relates negatively.

1:30. Predicting social competence. Frances M. CARP AND ABRAHAM CARP, Trinity University and Air Force Personnel Laboratory, San Antonio, Texas.

To test the hypothesis that social competence is related to ability to view situations from other than one's usual point of view, the Four Pictures Test was administered twice to 60 female student nurses, the second time with instructions to tell a story using a male figure as hero, and the adequacy of shift in identification to this imposed role was tested for relationship with peer sociometric scores. Ability to shift to the opposite sex role was clearly related to high sociometric scores, supporting the hypothesis of relationship between ability to perceive situations from another's point of view and social competence.

Division 8. Stereotyping and Race Attitudes

1:00-1:50. Federal Room, Statler

JOSEPH B. ADELSON, Chairman

1:00. The functional dependence of three components of racial prejudice. John H. Mann, New York University.

The study concerned the relation between three components of racial prejudice (cognitive, affective, and behavioral). Reliable measures of these three components were obtained from seventy-eight subjects at the beginning and end of an inter-racial small group experience designed to reduce racial prejudice. The analysis of the data indicated that (a) a significant decrease in the cognitive component of racial prejudice had occurred and (b) the pre-post difference scores of the various components of racial prejudice were uncorrelated. The theoretical implications of the latter finding are discussed.

1:10. The social stereotype and the concept of "implicit personality theory." PAUL F. SECORD, University of Nevada.

The concept of "implicit personality theory" is considered as a potential conceptual model for the study of stereotypes. Components of measurement models which might be applied to implicit personality theory are discussed. Stereotypes are found to be a special case involving implicit personality theories which are shared by a group of perceivers with respect to a group of stimulus persons. This application provides for the precise measurement of, and for the integration of, the concept of the stereotype with cognitive theory and principles.

1:20. A factor analysis of anti-semitic and anti-Negro attitudes. Peter T. Pompilo, Seton Psychiatric Institute, Baltimore, Maryland.

This study investigated whether prejudicial attitudes toward different minority groups have a common underlying disposition. Tetrachoric intercorrelations of 181 subjects' responses to a questionnaire containing undesirable statements about Negroes, Jews, and people in general were subjected to factor analysis. Five primary independent factors were identified as: Anti-Negroism, Mixed Prejudices, Anti-Semitism, Antagonistic Attitudes Toward In-Group, Unnamed. No second-order general factor was found. Results tend to reject the hypothesis of a general disposition underlying prejudices and suggest rather three sets of attitudes. These are clearly different from critical, antagonistic attitudes toward one's in-group members.

1:30. The relative influence of social class and skin color upon stereotyping. RACHEL T. WEDDINGTON, Merrill-Palmer School.

Studies of stereotyping of Whites and Negroes reveal that favorable characteristics are attributed to Whites, unfavorable ones to Negroes; similarly, within the framework of social class, favorable traits are assigned to high-status individuals, unfavorable ones to low-status persons. This study was designed to test the hypothesis that skin color and social class presented concurrently would reveal the "sleeper" effect of social class in Negro-White stereotyping. Three hundred seventy-four subjects assigned traits to photographs of middle- and lower-class White and Negro children. Findings support the hypothesis and reveal interaction between the class and color of assigners and assignees.

Division 12. Psychopathology and Alcoholism

1:00-1:50. South American Room, Statler HERMAN FEIFEL, Chairman

1:00. A critical incident approach to the study of psychopathology. John C. Flanagan and Fred W. Schmid, American Institute for Research and University of Pittsburgh.

Much difficulty has been encountered in attempting to predict "real-life" behavior of mental patients from interview and test data. As a preliminary step toward the development of a more direct approach, a sample of 854 critical incidents of the behavior of hospitalized mental patients was collected from psychiatric nursing staff, inductively categorized, and evaluated statistically. A critical behavior record form listing fourteen behavior categories under the

three main headings of "aggressive," "immature," and "irrational" behavior was developed and evaluated. Results tend to confirm the hypothesis stating that critical incident data provide a sound basis for the behavioral study of psychopathology.

1:10. Psychopathological influences upon the adjustive behavior of mental patients. Donald H. Bullock and Manly Y. Brunt, Institute of the Pennsylvania Hospital, Philadelphia.

The problem was to develop a psychological workfor-reward situation and reward method satisfactory for motivating acute and chronic psychotics and severe neurotics to perform during extended and repeated sessions and for elucidating psychopathological influences upon their exploratory and adjustive behavior. Thirty patients and 35 nursing trainees were tested. Knob pulling responses produced chips which patients exchanged for Snack Bar credit vouchers, nonpatients for cash. Fixed intervals, fixed ratios, and response reversals were introduced. Three of four hospitalized mental patients and all nonpatients were adequately motivated. Differences between patients and nonpatients and among patients revealed psychopathological influences.

1:20. Psychological changes during intoxication in alcoholics and social drinkers. MILDRED WEISS, Cleveland Center for Alcoholism.

Ten alcoholics and ten social drinkers were hospitalized and blood alcohol concentrations of .15% induced. Four WAIS subtests, the Rorschach, Bender-Gestalt, and Draw-a-Person tests were administered during intoxication and when subjects were sober. Changes were observed and analyzed in terms of current theories of alcoholism. Both alcoholics and social drinkers showed decreases in "reasoning, judgment, and abstracting ability," and in all types of intellectual functioning. Alcoholics showed increases in "overflowing expansiveness" and "confabulation," while social drinkers showed increases in "bizarre ideational activity," "conceptual confusion and disorganization" and decreases in "rigid, brittle over-control." In general, changes vary with personality type rather than with drinking history.

1:30. Personality analysis of alcoholics and their wives by the Kaiser method of multilevel measurement of interpersonal behavior. Howard E. Mitchell, University of Pennsylvania School of Medicine.

This report is part of a larger project investigating the interrelatedness of alcoholism and marital conflict through intensive study of conflicted marriages in which the husband is alcoholic and wife nonalcoholic. Comparisons among partners' self and spouse Interpersonal Check List ratings (Level II), TAT (Level III), and Counselor Interpersonal Check List ratings of spouses (Anchoring Level) allowed determination of: extent to which alcoholic husbands perceived themselves as more or less dominant than their wives, the consistency of the alcoholic's fantasies with conscious descriptions, and counselor's ratings of couples—compared to the conscious and preconscious descriptions partners give to self and spouse.

Division 12. Symposium: Current Trends in Psychosomatic Research

1:00-2:50. Ballroom, Statler

WILLIAM G. SHIPMAN, Chairman

Participants: Louis D. Cohen, Ann Magaret Garner, Joseph V. Brady, and Roland C. Davis.

Division 13. Symposium: How to Get into the Consulting Business

1:00-2:50. North Room, Mayflower

HARRY J. OLDER, Chairman

Participants: Jack W. Dunlap, Walter R. Mahler, E. Lakin Phillips, and James R. Porter.

Division 16. Symposium: The Dynamics of Establishing and Maintaining Programs for the Gifted

1:00-2:50. Pan American Room, Mayflower Vera V. Miller, Chairman

Participants: Charlotte D. Elmott, James R. Hobson, William Itkin, Mabel C. Purl, Mary H. Walker, and Elizabeth Woods.

Divisions 7, 15, 16, and 17. Symposium: Work with Children and Adolescents as a Part of Psychological Training: Status and Needs

2:00-3:50. South American Room, Statler

T. Ernest Newland, Chairman
Participants: Robert E. Bills, Stanley Marzolf,
Boyd R. McCandless, and Frances A. Mullen.

Division 8. Measurement of Attitudes and Attitude Changes

2:00-2:50. Federal Room, Statler.

JOSEPH M. BOBBITT, Chairman

2:00. An exploratory study of change in teachers' attitudes toward intergroup relations in the classroom during the first year of desegregation in the Kansas City, Missouri, public schools. Constance B. Nelson, University of Kansas City.

This was an experimental study carried out within an explicit field theory framework. The experimental group (desegregated teachers) differed significantly in attitude change, as measured here, from the control group (segregated teachers). This change was not attributed to desegregation's "out there" automatically effecting change "within" the teachers. Rather, it was postulated that such change might result from complex transactions between the induced "power field" of desegregation, situational factors, and the teachers' own forces. The sociopsychological variables of grade-taught, race, fall F score, years-taught, mobility, and age of the teachers were in general not significantly related to attitude change.

2:10. Ego-defense, other-directedness, and attitude change. Charles G. McClintock, University of California, Santa Barbara.

The purpose of the study was to investigate the relationship between two personality syndromes, other-directedness and ego-defensiveness, and attitude change. Other-directedness refers to persons weak in inner authority who are dependent upon external authority for behavioral and attitudinal choices. Ego-defensiveness refers to persons who use particular attitudes in order to protect their self-percept against anxiety and guilt. The attitudinal area investigated was anti-Negro stereotypes. The findings indicated that understanding the operation of these two personality syndromes is useful in deriving effective manipulations for producing attitude change.

 Pretest-treatment interaction effects in attitudinal studies. Robert E. Lana, University of Maryland.

This study is methodological in purpose and was designed to investigate a possible interaction effect of an attitudinal pretest and a persuasive communication in the widely used "pretest-treatment-posttest" attitude change research design. The existence of such an interaction effect would make doubtful the current interpretations of the results of studies utilizing this model without the proper controls. A four-minute recorded pro-vivisection talk and a tenitem vivisection questionnaire were used as the treatment and measuring instrument. It was found that the administration of a pretest does not necessarily result in a significant pretest-treatment interaction effect.

2:30. An empirical study of a new attitude measurement technique: The method of unfolded partial rank order. Thomas J. Banta and Marshall H. Segall, Columbia University.

This method provides, in a single questionnaire administration, a simultaneous ordering of items and respondents in terms of their favorableness toward a given social object. Other features of this technique include: (a) two attitude scores: a Likert-type summated rating based on responses to all items and a mean score based on items agreed with; (b) Guttman-type parallelogram analysis of unidimensionality; (c) provision by respondents of unfolded data, eliminating unfolding analysis; (d) a measure of latitude of acceptance; (e) an index of item clarity. By capitalizing on the nonindependence of judgment and attitude, the method provides a useful measure of relative position along an attitude continuum.

Division 12. The Self Concept

2:00-2:50. Congressional Room, Statler
Julius Seeman, Chairman

2:00. Expressed acceptance of self and others in psychotherapists. Julian W. Streitfeld, Columbia University.

A direct test was made of the hypothesis that better psychotherapists are more accepting of others, and more self-accepting, than are poorer psychotherapists. Berger's scales of Expressed Self-Acceptance and Expressed Acceptance of Others were used. The subjects, 79 students in an intensive required practicum in psychological counseling, were rated by their supervisors as to psychotherapeutic ability. The results failed to show any relationship between psychotherapeutic ability and expressed acceptance of self or expressed acceptance of others.

2:10. The relationship between self-acceptance and frequency of medical consultations. Norman S. Greenfield and Robert Roessler, University of Wisconsin Medical School.

The hypothesis tested was that individuals judged to be low in self-acceptance would seek more frequent medical attention than would subjects judged to be higher in self-acceptance. Two indices of self-acceptance, a measure of expressed attitudes toward the self, and a history of a suicidal attempt were used to identify two independent groups of university students who were judged to be low in self-acceptance. These groups were compared with controls with regard to the number of medical visits made to

the student health clinic during their first semester at the university. Results indicated statistically significant confirmation of the hypothesis.

2:20. Dependency and self concept as functions of acceptance and rejection by others. MARY PA-TRICIA FINNERAN, Astor Home for Children, Rhinebeck, New York. (Sponsor, Ralph W. Colvin)

Interpersonal theories of personality stress the dynamic interrelationship between Self Concept, Dependency, and Social Acceptance. The present research seeks to explore these relationships with the hypotheses: (a) High Self Concept is directly associated with Popularity and inversely associated with Unpopularity. (b) Dependency is inversely associated with Popularity and directly associated with Unpopularity. Results support the hypotheses. There was a statistically significant tendency for (a) subjects of high Self Concept to be chosen as friends and those of low Self Concept to be rejected and (b) subjects of high Dependency to be rejected.

2:30. Experiencing: A variable in the process of therapeutic change. EUGENE T. GENDLIN. (Sponsor, Carl R. Rogers)

"Experiencing" is a variable which functions in the process of therapy. It occurs in the immediate present. An individual can refer directly to experiencing as a felt datum in his phenomenal field. Three functions of experiencing in therapy are: it is intensely felt, directly referred to, and conceptualized on the basis of the implicit meaning of this direct referent. Different orientations describe therapist responses as effective when they enhance the function of experiencing in therapy. Several operational research projects have begun to test the function of experiencing in therapeutic change by correlating observable indices of experiencing with other measures of therapy.

Division 7. Learning and Perception

3:00-4:50. Pan American Room, Statler Charles D. SMOCK, Chairman

3:00. Withdrawal of a positive reinforcer and strength of behavior in children. Charles L. Kogan, VA Hospital, Montrose, New York.

The control of behavior has been intensively studied in the areas of reinforcement, punishment, extinction, and frustration (restraints and barriers). The withdrawal or loss of a positively reinforcing object, though a common human experience, has

been relatively neglected. This study explored Skinner's hypothesis that withdrawal of a positive reinforcer (reward) has results similar to the presentation of an aversive (noxious) stimulus. The effects of withdrawal were compared with those of extinction in 50 preschool children. The results suggest that withdrawal of reward is more closely allied to extinction than to aversive stimulation. Withdrawal produced greater behavioral variation rather than response inhibition.

3:10. Simultaneous and successive presentation of stimuli in discrimination learning with children. Wendell E. Jeffrey, University of California, Los Angeles.

Two cubes with 2.0 sq. in. and 2.5 sq. in. sides provided a relatively difficult size discrimination for kindergarten children. Group I viewed the stimuli simultaneously. Reinforcement followed pressing a button in front of the positive stimulus. Groups II and III saw the stimuli successively. The responses involved were varied. Group II pushed buttons (on the right or left) for the positive and negative stimuli. Group III pressed or did not press a single button. Between-group differences were significant with Group I fastest and II slowest. There was no difference in transfer between methods.

3:20. Absolute vs. relational discrimination on the dimension of number. Joachim F. Wohlwill.

It was hypothesized that at the low end of the dimension of number absolute discrimination increases with age, due to increased facilitation from mediating number concepts. Results were confirmatory for a three-stimulus discrimination (middle number positive during training): transposition decreased in frequency, and generalized absolute responses on a transfer problem increased between ages 8 and 12. For a corresponding two-stimulus problem (larger number positive) discrimination remained wholly relational at all ages (6, 8, and 12). The implications of the results for the problem of transposition, and the role of verbal mediators in discrimination learning, are discussed.

3:30. Concept formation following two methods of training verbal mediators. D. D. KLUPPEL AND WENDELL E. JEFFREY, University of California, Los Angeles.

Twenty-four fourth grade children were divided into two groups. With the number of trials equated, Group I learned the names of single instances of each of six concepts and Group II learned names for three instances of the same concepts. Both groups then learned to attach color names to other instances

of the concepts. The differences between means of the two groups favor the Group II training procedure. The hypothesis that appropriate mediators would limit the effect of type of concept on learning was not substantiated. The F between concepts was 35.6, p < .01, df = 5 and 110.

3:40. The relationship between anxiety and two measures of speed in a reaction time task. David S. Palermo, Southern Illinois University.

Recent studies report conflicting results related to reaction time performance of Ss scoring high and low on the MAS. These studies have not been consistent in the responses measured. This study was designed to measure, separately, both starting speed and movement speed in a reaction time task, as related to scores on the CMAS. The usual sex differences in favor of the boys were found at all three levels of anxiety on both measures of reaction speed, but no significant relationships were obtained between anxiety scores and either speed measure. A low, significant correlation was obtained between the two speed measures.

3:50. Changes in adaptation to prolonged perceptual distortion: A developmental study. Duilio Giannitrapani. Larned State Hospital. Kansas.

The purpose of this investigation is twofold: to study the nature of adaptation processes in diverse situations and to study the changes that take place in these processes in the course of ontogenesis. Three adapting stimuli were used: magnification, visual tilt, and body tilt. The sample ranged from 6 to 21 years of age with a total of 144 subjects. The data were analyzed in a factorial design with the results in general supporting the hypothesis derived from developmental theory, namely, that adaptation is greatest in children and least in adults. The relevance of these findings to the development of an adaptation theory will be discussed.

4:00. Adaptation to a tilted rod in schizophrenic boys. Louis P. Carini and Patricia F. Carini, Columbia University and Rockland State Hospital, New York.

In a darkroom, 53 schizophrenic and 80 normal boys between the ages of 8 and 19 were presented (three replications) with a luminous rod 4° clockwise and counter-clockwise from objective vertical. S had to adjust the rod to vertical after a 30 second inspection period ("satiation"). Contrary to hypothesis, adaptation was greater for younger and older schizophrenic boys than for normal boys of comparable ages. The discussion considers the differences in the developmental patterns of adaptation in schizo-

phrenic and normal boys and examines the implications of these patterns for adaptation and related phenomena in schizophrenic and normal adults.

4:10. Size-constancy in mentally defective and normal groups. Noël Jenkin and Sally A. Morse, Vineland Training School.

Measures of objective binocular size-distance judgment were obtained from 4 groups of Ss; familial type mental defectives, organically brain-damaged mental defectives, normal adolescents, and normal adults. The organic group gave judgments significantly smaller (i.e. nearer to a visual angle match) than those of the other groups. Evidence is provided to show that this is not due to low intelligence. It is proposed that size-constancy develops with age except in cases where developmental anomaly or early cerebral trauma impairs development of the necessary integrative mechanisms.

Divisions 7 and 12. Symposium: Pediatrics and Psychology in Research in Child Development

3:00-4:50. Ballroom, Statler

IVAN N. MENSH, Chairman

Participants:

Frances K. Graham. Prognosis of psychological development and other clinical status following perinatal anoxia.

EMMA McC. LAYMAN. Psychodynamics of pica in young children.

IVAN N. MENSH. Adjustment, sex, and social class correlates in school children.

Discussant: ROBERT H. PARROTT.

Division 8. Sensory and Physiological Factors

3:00-3:50. Congressional Room, Statler

WAYNE H. HOLTZMAN, Chairman

3:00. Methodological and conceptual problems in the study of sensory deprivation. Philip E. Kubzansky, Harvard Medical School.

Research in sensory deprivation is growing rapidly. Results of these studies are believed to have important theoretical and practical implications. This report attempts a brief overview of methodological problems and conceptual issues raised by these investigations. Problems of definition of the concept and experimental implementation are raised, with suggestions for research directions essential to clarifying these problems. The relationship of personality variables to tolerance for sensory deprivation is considered as well as the need for taking into ac-

count sensory modality preferences. Finally there is an examination of the various response measures employed in these studies and some of their complexities.

3:10. Influence of prior verbalization and instructions on visual sensations reported under conditions of reduced sensory input. EDWARD J. KANDEL, THOMAS I. MYERS, AND DONALD B. MURPHY, U. S. Army Leadership Human Research Unit, California.

Thirty Army trainees received verbalization experience on selected Rorschach cards; another 30 had no Rorschach pretest. Subsequently, half of the Ss in each group were instructed that it was normal to experience visual sensations in the absence of light; the other half were told that psychiatric patients experienced these visual sensations. Each S then put on opaque goggles and lay on a bed in a darkened room. After ten minutes S was asked to describe the visual sensations he was actually seeing. The positive instructions resulted in significantly more reports of visual sensations than the negative instructions; prior verbalization had no effect.

 Antecedent sensory conditions for the arousal of affect. RALPH NORMAN HABER, Stanford University.

This study is an attempt to specify the antecedent conditions which produce affective arousal. McClelland has developed a discrepancy hypothesis which states that positive affect is the result of smaller discrepancies of a sensory or perceptual event from the adaptation level of the organism; negative affect is the result of larger discrepancies. The hypothesis was tested with temperature discrepancies from adaptation of the hands. It was found that as the discrepancy increased from adaptation, in either direction, affect first increased and then decreased. These results were discussed as being critical of a tension reduction theory of motivation.

3:30. Kinaesthetic figural aftereffect as a measure of cortical excitation and inhibition. ERNEST G. POSER, McGill University.

Data published by Klein and Krech, Wertheimer, and others suggest that kinaesthetic figural aftereffect may be related to cortical conductivity. More recently Eysenck has found this measure useful in differentiating neurotic introverts from neurotic extroverts. In the present study three groups of 10 male volunteers were tested on kinaesthetic figural aftereffect before and two hours after administration of sodium amytal, dexedrine, and placebo, respectively. The prediction that dexedrine would reduce

satiation effects was borne out very significantly. The effect of sodium amytal however, was indistinguishable from placebo effect. The theoretical implications of these findings are discussed.

Division 8. Discussion Group: Experimental Study of Social Interaction

3:00-4:50. Michigan Room, Statler
Bernard Mausner, Chairman

Division 12. Stress and Brain Damage

3:00-3:50. Federal Room, Statler

HARRY M. GRAYSON, Chairman

3:00. Some changes in psychometric, perceptual, and motor performance as a function of sleep deprivation. John H. Seymour, New York University School of Education. (Sponsor, John J. Sullivan)

Test performance and behavior of 13 normal subjects were studied during a 60-hour sleep deprivation period. Psychometric, motor, and perceptual performance were not appreciably affected; but unstructured performance represented by the Rorschach and TAT is more susceptible to change under stress. Test patterns were found to be highly individual. Personality, and the emotional life of the individual, is more greatly affected by stress than psychophysiological factors. The results were interpreted in terms of the theory that fatigue and impairment are strongly influenced by the entire organization of an individual.

3:10. Sensory isolation: Hallucinogenic effects of a brief procedure. Gerald Rosenbaum, Bertram D. Cohen, Shirley I. Dobie, and Jacques S. Gottlieb, Lafayette Clinic and Wayne State University.

The effects of brief sensory isolation with suggestion were studied using normal and psychiatric subjects. Subjects were exposed to reduced visual, auditory, and tactual stimulation for one hour and informed that they would perceive sensations ordinarily below conscious awareness. Most subjects showed increased sensitivity and a tendency toward hallucinatory distortion of residual cues, but no elaborate hallucinations occurred. A system for classifying hallucinations was devised. It was concluded that the development of hallucinations in sensory isolation results largely from increased sensitivity to residual stimuli, which generates the fabrication of events in a situation providing only minimal opportunities to test reality.

3:20. The influence of instructions on spiral aftereffect reports. Perry London and James H. Bryan, Madigan Army Hospital, Tacoma, Washington.

Previous studies indicate that brain damaged S's fail to report the Spiral Aftereffect (SAE). The present study, deriving hypotheses from Goldstein's theory of "catastrophic reactions," predicted that differential responses would result from varying the test instructions. Forty-four brain damaged S's and 22 Normal controls were administered the SAE. Two sets of instructions (Structured and Neutral) were employed. Organics given Structured instructions reported SAE as frequently as did Normals, while Organics with Neutral instructions were relatively unable to report the phenomenon. Results demonstrate that failure to report SAE is not a simple function of neurophysiological damage and support Goldstein's claim of "perceptual ability" in Organics.

3:30. Reversible figures and brain damage. Mur-RAY LEVINE AND GEORGE SPIVACK, Devereux Foundation, Institute for Research and Training, Devon, Pennsylvania.

A group of 24 adult females with brain injury since childhood and a group of normals of the same age and sex were administered the Necker Cube and Schroder staircase for one minute each on two occasions, one month apart. A significantly larger number of brain injured Ss did not report reversals, and the group differences in median reversal rate were significant beyond the .001 level for both figures. Alternate form and retest reliability after one month ranged from .82 to .92. No relationship obtained between either figure and age or a measure of intelligence. Reversible figures are as valid and reliable a test of brain damage as any currently used, and are more efficient.

Division 16. Symposium: Counseling Parents of Mentally Retarded Children

3:00-4:50. Pan American Room, Mayflower

HENRY PLATT, Chairman

Participants:

IRVING SCHULMAN. Early recognition and acceptance of the retarded child's limitations.

WALLACE A. VERBURG. Role of the school psychologist in counseling parents of slow learners.

 I. IGNACY GOLDBERG. Community programs for parents of retarded children.

Bernard White. Group counseling with parents of mentally retarded children.

Discussant: EDWARD L. FRENCH.

Division 8. Creative Behavior and Intelligence

4:00-4:50. Congressional Room, Statler

ABRAHAM CARP, Chairman

4:00. The highly creative and the highly intelligent adolescent: An attempt at differentiation. Jacob W. Getzels and Philip W. Jackson, University of Chicago.

Discovery of variables differentiating the "creative" from the "intelligent" person is the focus of much current theoretical concern. This study examines the achievement motives, fantasy productions, school performance, and teacher preferences of two types of adolescents: those exceptionally high in creativity but not in IQ and those exceptionally high in IQ but not in creativity. The results indicate: The groups were equally superior in school achievement. There were no differences in n Achievement. There were significant differences in the fantasy productions—the creative group using more stimulus-free, humorous, and playful themes. The intelligent subjects were preferred by teachers.

4:10. Artist and research scientist: A comparative study. Bernice T. Eiduson, Hacker Foundation for Psychiatric Research and Education, Beverly Hills, California.

This research is an investigation of the motivational and personality characteristics of persons who are at work in creative fields. Forty subjects in the fields of the arts (literature, music, drama, and visual arts) were compared with 40 subjects engaged in research work in the fields of the natural sciences (the physical, biological, and earth sciences, in academic institutions). Previous work had shown that artists differ from nonartists in many characteristics of their ways of thinking and perceiving, their personality and emotional behavior, and their motivations in regard to work. This raised the question of whether these characteristics were specific only to persons in the arts or whether these were found to distinguish persons in other creative fields as well; this was the subject of investigation in this research.

4:20. Some preliminary studies of memory styles: Importers versus skeletonizers. I. H. PAUL, New York University Research Center for Mental Health.

An exploratory experiment based on Bartlett's studies revealed that individuals differ systematically in manner (as well as in accuracy) of recalling extended and connected verbal material. Some Ss elab-

orated the text, adding detail and color, and inserting explications—they "imported"; others pared it, stripping away unessentials—they "skeletonized." In three experiments, a variety of techniques to study and measure these tendencies revealed them to be stable and general individual difference parameters independent of retentionability. They were conceptualized as cognitive styles and interpreted as reflecting some individuals' greater reliance upon the schematic process of "recruitment" and others' upon "fractionation."

4:30. Personality organization in cognitive attitudes and intellectual abilities. RILEY W. GARDNER, DOUGLAS N. JACKSON, AND SAMUEL MESSICK, Menninger Foundation, Pennsylvania State University, and Educational Testing Service.

This study was designed to test the general hypothesis that two classes of variables—cognitive attitudes and intellectual abilities—are both aspects of personality organization as reflected in cognitive behavior. A matrix of intercorrelations between measures of the cognitive attitudes of field-dependence (as defined by Witkin), equivalence-range, constricted and flexible control, and leveling-sharpening was factor analyzed by Ledyard Tucker's interbattery method. Results offered support for the major specific hypothesis relating field dependence to the intellectual abilities of flexibility of closure, spatial relations and orientation, and verbal knowledge.

Division 12. The Ward Society

4:00-4:50. Federal Room, Statler

LEO SHATIN, Chairman

4:00. Emergent differences between two experimental ward cultures as a function of staffing ratios. Martin M. Gutenkauf and William H. Lundin, Chicago State Hospital, Illinois.

Two experimental hospital wards, each housing 50 chronic schizophrenic male patients, and each employing a different ratio of aides to patients, were studied for a two-year period. A detailed analysis of differential standards of conduct, and values, between the wards is presented. The relationship between ward culture and staffing needs is explained as follows: the degree to which a ward is adequately staffed is a function of quality and extent of communication between patients and aides permitted by the ward culture, rather than a function of aide-patient ratios per se.

4:10. Mental illness, background variables, and social interaction in ward groups. Melvin Cohen and Edward J. Murray, Walter Reed Army Institute of Research.

Previously reported research showed that a number of sociometric measures of group organization decreased from a control medical, to an open psychiatric, to a locked psychiatric ward representing a continuum of degree of mental illness. The present study showed that as degree of mental illness increases, sociometric choices are influenced less by similarities in social background variables such as age, race, and population area of origin. Except for paranoid schizophrenics, similarities in diagnostic variables have little effect on sociometric choices. These results were related to earlier work in this area.

4:20. A new use of sociometric techniques in psychiatric wards. Edward Jacobs and John F. Muldoon, Pennsylvania State University and Craig House for Children, Pittsburgh, Pennsylvania.

Because of their clumsiness, sociometric techniques have not demonstrated their worth in evaluating the dynamic relationships among patients and their progress in dealing with the interpersonal pressures of ward living, which are increasing as hospital policies permit more social participation. This paper reports the use of sociometric techniques on a monthly basis over a period of 13 months. Graphic representations of the individual patient's progress will be presented. The sociometric device was intercorrelated with selected MMPI scales and factor analyzed.

4:30. Ward administration: Some considerations and experiences. John F. Muldoon, Craig House for Children, Pittsburgh, Pennsylvania.

A shortage of psychiatrists and a more flexible, sensitive approach to the total treatment program of the mentally ill have resulted in psychologists' assuming new administrative responsibilities in mental hospitals. This fact has changed the role of the hospital psychologist and the role of the administrator as perceived by the patients. It presents an opportunity to evaluate the traditionally authoritarian benevolence of the hospital and the doctorpatient relationship. This paper reports the experiences of the author on a ward in which he was the sole professional person and in which the general policies of ward administration were drastically changed.

THURSDAY EVENING, AUGUST 28

Division 8 and International Council of Women Psychologists. Invited Address

8:00-8:50. Congressional Room, Statler
DOROTHEA EWERS, CHAIRMAN

EDGAR H. SCHEIN. Interpersonal Communication: Key to Group Solidarity.

Division 16. Symposium: Research Studies in Progress in the Field of Mental Retardation and their Possible Integration

8:00-9:50. Pan American Room, Mayflower

NATHAN S. LEICHMAN, Chairman

Participants:

HARVEY F. DINGMAN. Population movement study of mentally retarded.

RICHARD KOCH. Clinical study of mental retardation at Los Angeles Children's Hospital Study Clinic.

MAURICE G. Kott. Administrative aspects of research in mental retardation.

MURRAY TONDOW. Use of high speed computers in integrating independent studies on mental retardation.

Discussant: HAROLD BORKO.

FRIDAY MORNING, AUGUST 29

APA Board of Professional Affairs and Conference of State Psychological Associations.
Workshop on Professional Problems: Legislation—Advantages and Disadvantages

9:00-11:50. Ohio Room, Statler

GEORGE A. KELLY, Chairman

Participants: John G. Darley, George S. Speer, and Albert S. Thompson.

Division 7. Symposium: Recent Developments in Experimental Methods with Children

9:00-11:50. Pan American Room, Statler GLENN TERRELL, Chairman

Participants:

SIDNEY W. BIJOU. Operant or instrumental techniques with individual baseline measures.

CHANDLER G. Screven. Research on running time and physical work of children under various reinforcement conditions. Lewis P. Lipsitt. The systematic study of variables affecting children's discrimination learning.

KATHRYN J. NORCROSS. Verbal paired-associate research with children.

HAROLD STEVENSON. Research methods with children involving partial reinforcement.

Discussant: WENDELL E. JEFFREY.

Division 8. Correlates of Authoritarian Attitude

9:00-9:50. South American Room, Statler

THELMA G. ALPER, Chairman

9:00. The effect of authoritarian personality on learning. Ann Filinger Neel, Wyandotte County Guidance Clinic.

In a study of 30 senior medical students F Scale scores were compared with performance on several tests given during a required course in Psychiatry and with their evaluation of the course. It was discovered, as predicted, that higher F Scale scores resulted in greater difficulty in learning ambiguous material or that which involves humanitarian philosophy and an understanding of people. No such interference was found on tests of a more factual nature. It was predicted but not validated that authoritarian persons should verbalize more dislike and discomfort about the class. These findings lead to a hypothesis that such attitudes should influence learning in social science but not in physical science.

9:10. The relationship between authoritarianism, prejudice, and church attendance in a large university faculty. E. L. Struening, VA Hospital, Montrose, New York. (Sponsor, Jacob Cohen)

From formulations of Fromm, Allport, May, and Adorno, et al., a linear relationship between church attendance and authoritarianism and a curvilinear relationship between church attendance and prejudice were deduced. A questionnaire including F Scale and prejudice items was sent to 1862 university faculty members, with 911 usable. Two highly internally consistent scales were developed through factor analysis. Relationship between church attendance and prejudice mean scores is curvilinear with the peak at twice a month and minimum points at zero and eleven times per month. Authoritarian mean scores rise sharply from zero through three times per month and level off beyond that point.

9:20. Authoritarian or acquiescent: Some behavioral differences. Peggy Cook, Columbia University.

Are the results in a standardized experimental situation affected by the personality characteristics of the experimenter and the subject? This question was examined by selecting and systematically pairing nine experimenters and 54 subjects from three response categories on a revised F Scale: high authoritarians, low authoritarians, and acquiescents. The results demonstrate that (a) there are important behavioral differences between high authoritarians and acquiescents with equally high F scores and (b) personality characteristics affect the findings in a "standardized" experimental situation; i.e., differences in ability to influence and in tendency to be influenced, as well as differences in interpersonal perception, are related to F Scale score.

9:30. Acceptance of authority and parental identification. JAMES BIERI AND ROBIN LOBECK, Columbia University.

Acceptance of authority, measured by 20 F Scale type items, was related to patterns of parental identification assessed by interview, semantic differential, and TAT. Results are presented for 60 undergraduates, 30 of each sex, divided into groups which are high, middle, and low in acceptance of authority. Significant differences among the groups were found in overall identification, perceived similarity to parents, degree of involvement with parents, and inconsistency of identification. The findings are compared to the formulations of the authoritarian personality by the California group, with particular emphasis on subjects' perceptions of parental strength, dominance, warmth, and punitiveness.

Division 12. Rorschach

9:00-10:50. Federal Room, Statler

WALTER GEORGE KLOPFER, Chairman

9:00. A comparison of the discriminative properties of two Rorschach methodologies. Patricia F. Waller, University of North Carolina.

The Baughman paired comparison method of inquiry for the Rorschach was compared with the regular Rorschach procedure. Since the paired comparison method is more sensitive in eliciting determinants, it should differentiate more adequately between psychiatric and nonpsychiatric subjects, especially in relation to the shading determinant. Data from 162 nonpsychiatric subjects and 60 psychiatric subjects were analyzed. Half of each group received the regular procedure and half the Baughman procedure. On the basis of the shading determinant, the regular procedure failed to differentiate the two populations. The Baughman method showed marked dif-

ferences and thus appears to be a more sensitive diagnostic instrument.

9:15. Rorschach Prognostic Rating Scale assessment of ego structure in the children of psychotic parents. Thomas G. Stampfl, John Carroll University.

Geneticists have provided statistical data which indicate a markedly greater expectancy rate for the later development of psychosis in the children of psychotic parents. Psychodynamic personality theorists maintain that a deficiency in ego structure or lack of "ego strength" is a critical variable in the etiology of functional psychotic disorder. The purpose of the study was to test the hypothesis that the children of psychotic parents have deficiencies in ego structure as measured by the Rorschach Prognostic Rating Scale. Twenty-nine children of psychotic parents were compared with 60 children of nonpsychotic parents similar in age, sex, and intelligence. The findings confirmed the stated hypothesis.

9:30. Two Rorschach test indices of intellectual functioning in children: Beck's Z and Klopfer and Davidson's FLR and the intelligence quotients of first-grade children. S. Thomas Cummings and Nettle H. Ledwith, University of Chicago and Pittsburgh Child Guidance Center.

In contrast with most Rorschach test signs, Beck's Z and Klopfer and Davidson's Form Level Rating have been postulated by their authors as varying in direct linear fashion with the intelligence of the normal subject. This study evaluates the relationships between these two Rorschach test scores and the intelligence quotients of first-grade school children. A stratified sample of 160 urban first-grade school children at the 80-month age level, equally divided as to sex. Each subject was administered the Revised Stanford-Binet Intelligence Scale, Form L, and Rorschach Test in a single individual testing session in his own school. Product-moment correlation and t test of group means were used to evaluate relationships. Z showed a low positive but statistically insignificant degree of relationship with the criterion of IQs. FLR showed a medium positive and statistically significant degree of relationship with the criterion, but the predictive efficiency possible from this degree of relationship is too slight to permit accurate prediction of intelligence level from knowledge of FLR alone. These results indicate that Beck's Z and Klopfer's FLR do not show direct linear variation with intelligence at the 80month age level for urban first-grade school children.

9:45. Correlates of the Rorschach developmental level score. HAROLD WILENSKY, VA Hospital, Montrose, New York.

Werner's developmental model of perceptual organization when applied to the scoring of Rorschach responses has provided a means of demonstrating relationships between the Rorschach and overt behavior. Developmental level scores assigned to individual Rorschach responses are based upon form appropriateness, form definiteness, location, logical coherence of the response, and differentiation and integration of parts. The present study determined the relationship of each of these elements with mental health ratings of 41 chronic schizophrenics. All correlations with mental health were significant and consistent with hypotheses concerning the relationship of these variables with developmental level.

10:00. The Rorschach organizational pattern as a diagnostic aid. MARGUERITE R. HERTZ AND AL-BERT F. PAOLINO, Western Reserve University and Cleveland Psychiatric Institute.

The significance of the organizational pattern (Beck's Z or Hertz' g) is explored as an aid in detecting primary thought disorders and delusional states. Since the g pattern reflects capacity to organize parts into meaningful relations, it should aid in differentiating levels of disorganization. It is hypothesized that a schizophrenic group showing severe thought disorders should reveal qualitatively different patterns than a group without such symptoms. Comparing the g patterns analyzed in terms of (a) form level, (b) originality, commonality, vagueness, (c) areas, (d) determinants, and (e) qualitative features of the "organized" concept, differences are observed in the protocols of 30 paranoid schizophrenics with pronounced thought disorders and 30 neurotics.

10:15. A comparison of some Rorschach anxiety indicators in hypnotically induced anxiety and normal states. EUGENE E. LEVITT AND HANUS J. GROSZ, Indiana University Medical Center and Institute of Psychiatric Research.

The Rorschach was administered to 12 normal individuals in each of two conditions: in the normal state and in a hypnotically induced, diffuse anxiety state. Records were compared on ten factors which have commonly been considered to be indicative of anxiety: R, Av, RT, W%, F%, F+%, M, P, and the presence of M-, pure C, and pure Y. Significant differences were found only for F% (lower in anxiety) and M- (appearing more often in anxiety). P (lower in anxiety) were close to significance. These

results suggest that the traditional concept of Rorschach anxiety indicators is still open to question.

 Color and emotional arousal. Robert M. Gerard, University of California, Los Angeles.

This study investigated the effect of different colors on psychophysiological measures indicative of emotional changes. Blue, red, and white lights of equal brightness were each projected for 10 minutes on 24 normal adult males. The autonomic nervous system and visual cortex were significantly less aroused during blue than during red or white illumination. Different colors also elicited significantly different feelings, for instance: greater relaxation, less anxiety and hostility during blue; more tension and excitement during red illumination. Manifest anxiety level was significantly correlated with increased physiological activation and subjective disturbance during red stimulation. Findings in the opposite direction of quiescence and relief suggested that blue illumination may benefit individuals with chronic tension and anxiety. Implications of the results for Rorschach theory, psychodiagnosis, and color therapy are discussed.

Division 12. Symposium: The Effect of Stress on Cancer Development

9:00-10:50. Ballroom, Statler

JOHN A. STERN, Chairman

Participants:

James T. Marsh. The effects of two stressors on the development of malignant tumors.

GRANT NEWTON AND CHAUNCEY G. BLY. Cancer development as a function of early experience.

ALAN G. Krasnoff. Problems in the study of stress and tumor development: Results and comments.

ROBERT LEFTON. The effect of various stressors on the development of methylcholanthrene induced carcinomas.

Division 12 Committee on Professional Practice and Conference of Chief State Psychologists. Symposium: Problems, Opportunities; and Preparation of Psychologists for Various Kinds of Administrative Positions

9:00-10:50. Congressional Room, Statler

W. J. HUMBER, Chairman

Participants: Joseph E. Brewer, Stuart W. Cook, Milton J. Horowitz, and John M. McKee.

Division 16: Contributed Papers

9:00-9:50. Cabinet Room, Mayflower

JOHN F. HURLEY, Chairman

9:00. The effect of special teaching and special grouping on academically talented eighth graders. ELIZABETH MONROE DREWS, Michigan State University.

One hundred fifty academically talented (IQs 125 and above) eighth graders were chosen as subjects for a teaching experiment in social studies, which involved special treatment for some and no treatment for others. Special treatment involved instruction (teachers had preliminary training) which emphasized critical thinking and/or special grouping. No treatment was defined as assignment to traditional, heterogeneous classes. Students were randomly assigned to one of four situations: special teaching and homogeneous grouping, special teaching and heterogeneous grouping, traditional teaching and homogeneous grouping, and traditional teaching and heterogeneous grouping. Pretesting and post-testing was done in five areas: problem solving, dogmatism, creativity, reading comprehension, and social studies.

9:10. A pilot research in the understanding of rapid learning children. EUGENE L. MARIANI, Chattanooga Guidance Clinic.

The techniques of group testing, teacher evaluation, and individual testing were studied to determine a method of screening rapid learning children. It was found that both objective and subjective pupil evaluations are necessary in adequate detection of rapid learners. Personality, interest, and attitude variables of rapid learners were studied to open up new avenues of approach in understanding and developing the rapid learners. They have broad interests and capabilities not dealt with in usual school programs. The intra- and interpersonal feelings and attitudes of pupils, teachers, school administrators, and parents appear diverse as to role, function, and purpose in planning for the over-all development of the rapid learning child.

9:20. First memories of accidents and reading failure. LILLIAN WAGENHEIM, University of Southern California.

Among 93 fifth- and sixth-grade boys, first memories of accidents and body aggression were found to be: significantly related to low intelligence, even more significantly related to reading difficulties, and most significantly related to negative deviation in reading achievement from IQ expectancy. Chi squares were beyond the .01 level. Although nearly

as many "accident" memories occurred among the girls, no significant differences were found. The "significant" memories tended to be of accidents to the self without outside aggressor. They were interpreted as projections of unconscious conflicts related to defective superego development in boys, revolving around anxiety over destructive fantasies and threat of being injured.

 Construction of a security test for school age children. MICHAEL F. GRAPKO, University of Toronto.

The Institute of Child Study Security Test is in story form, including fifteen situations which bear on the child's relationships to parents, teachers, friends, work, and play. The test is based on a theory of security by W. E. Blatz. Each situation gives five choices of response, which the child ranks from one to five. Each choice is designed to reflect practices which describe different levels in security development. The ranks given for the 15 situations provide the data in calculating the consistency score and the security score. The test has been standardized on 623 children in Grades IV to VIII. Current revision of norms is based on 1,500 children.

Division 18 and Association of Correctional Psychologists. Symposium: Diagnosis and Treatment of the Sexual Deviate

9:00-10:50. Chinese Room, Mayflower Asher R. Pacht, Chairman

Participants:

RAYMOND GILBERT. Organization and administration of a sexual deviate treatment program.

E. Marie Fosdick. Studies in psychopathology: A theoretical analysis of the perversions.

A theoretical analysis of the perversions.

Albert Ellis. The psychology of sex offenders.

John C. Ehrmann. Problems in the diagnosis and treatment of the sexual deviate.

Division 20. Attitudes and Adjustment

9:00-9:50. California Room, Statler

HERBERT S. CONRAD, Chairman

 Toward earlier creativity in psychology. SID-NEY L. PRESSEY, Ohio State University.

Lehman has found notable creativity earlier in chemistry than in psychology and yet earlier in music. To find possible causes, biographical data were looked up regarding Lehman's lists (which he kindly made available to the writer) of famous chemists and musicians, to locate factors affecting early productivity, and the four volumes of *Psychology in*

Autobiography were similarly searched. Early contacts with people in the field, relevant materials as musical instruments or chemistry sets, opportunities to play or experiment, to continue uninterruptedly an early interest: all appeared important. It is argued that more popular writing on psychological topics, psychology in high school, maybe "psychology sets," relevant summer work, opportunity for earlier specialization: all might well bring both earlier flowering and better psychologists.

9:10. An investigation of the adjustment of working and retired public school teachers. WILBUR C. MILLER AND LIBBIE S. BURKE, University of Denver and Columbus State School.

The Your Activities and Attitudes Schedule was administered to 171 working or retired female public school classroom teachers. The subjects ranged in age between 60-69 years and were divided into three subgroups: teachers not yet retired, those retired, and those retired by the school system but now working at other jobs. Although all groups were in the average adjustment range as measured by the Chicago Adult Attitude Inventory, the retired group showed significantly poorer adjustment than the two working groups. Significant differences still remained after controlling for such factors as age, health, and attitudes toward work.

9:20. A sociocultural study of aged male amputees undergoing rehabilitation. VICTOR D. SANUA, Cornell University Medical College.

This study was designed to test the hypothesis that there are sociocultural components in patients' reactions to stress situations and disabilities. Fifty elderly male amputees (average age 67), comprising Jews, Catholics, Protestants, and Negroes on active rehabilitation, were interviewed in five New York City hospitals. Among other findings, the study revealed that Jews mourn their loss much more, present more somatic complaints, and have a pessimistic outlook in their rehabilitation. Besides comparing the reactions to the disability, various views on such topics as sex, prejudice, money, religion, etc. held by the different groups will also be presented.

9:30. The relationship between medical, psychological, and social factors and the psychiatric complaints of older patients. Lois Rommel, K. Warner Schale, James M. A. Weiss, and Thomas P. Melican, Washington University of Medicine.

By means of an original Psychiatric Complaint Scale (constructed from data obtained in our earlier extensive study of the behavior of complaining in older patients seen in a psychiatric outpatient clinic), an attempt was made to relate the existence of medical signs, symptoms, and complaints in older persons to past or present differences in medical, social, and psychological factors, as well as to the variables of age, sex, and diagnosis. This, in turn, provided an empirical basis for the formulation of theory relative to the development of various symptoms associated with mental disturbance in older persons.

Films. Child and Adolescent Behavior

9:00-11:50. Massachusetts Room, Statler

9:00. Six, Seven, and Eight Year Olds. New York University Film Library

9:35. The Teens. National Film Board of Canada

10:10. Expressive Movements in Infancy. Bela Mittleman

10:40. Emotional Maturity. McGraw-Hill Text-Films

APA Committee on Relations Between Psychology and Religion and Division 17. Symposium: Religious Factors and Values in Counseling

10:00-11:50. Jefferson Room, Mayflower Edward J. Shoben, Jr., Chairman

Participants: Paul E. Meehl, Stanley J. Segal, Kenneth W. Mann, Henry E. Kagan, and Charles A. Curran.

Division 8. Attitudes

10:00-10:50. New York Room, Statler Frances O. Triggs, Chairman

10:00. The relationship between religious belief and negative affect toward death. Arthur M. Adlerstein and Irving E. Alexander, Children's Hospital of Philadelphia and Princeton University.

Carefully selected religious and nonreligious groups of college students were compared with respect to their attitudes and feelings towards death. Instruments used were a word association task, the Semantic Differential, a prepared questionnaire, an open ended interview, and a "manifest anxiety" scale. Considered was the hypothesis that religious belief has as a function the reduction of negative affect toward death. In no instance in this investigation was this hypothesis supported. In the major test the converse of the hypothesis found support. "Man-

ifest anxiety" was reliably increased in the religious group after the questionnaire and interview about death.

10:10. Cigarette smoking and attitude toward the etiology of lung cancer. M. Powell Lawton AND Alfred E. Goldman, Norristown State Hospital, Pennsylvania.

A questionnaire on smoking habits and attitude toward the lung cancer-smoking controversy was completed by 72 lung cancer scientists and 72 experimental psychologists individually matched for age and sex. Cancer scientists more closely linked smoking and lung cancer and also showed a significantly more moderate lifetime use of cigarettes than psychologists. For those who had less exposure to the relevant evidence, the psychologists, attitude was found to effect current smoking, dissatisfaction with own habit, and attempts at modification of smoking pattern. Contrary to expectation, these relationships were not found for the cancer scientists.

10:20. Personal data, political opinions, and social attitudes of pro-Eisenhower and pro-Stevenson students in the 1956 presidential election. SHEL-DON J. LACHMAN, Wayne State University.

Of the 235 subjects (college students), 119 preferred Eisenhower and 116 Stevenson. Voting was largely along lines of political party preference, although a greater proportion of Democrats preferred Eisenhower as compared with the proportion of Republicans preferring Stevenson. Most of the students had reached a decision on the presidential candidate for whom they would vote months before the election. California F Scale scores were significantly higher for supporters of Eisenhower. Results are compared with a similar 1952 population. Significant differences in social orientation exist between pro-Eisenhower and pro-Stevenson respondents.

10:30. Conditions and consequences of traditionalistic and modernistic outlooks. Kurt W. Back, University of North Carolina.

Programs of improvement of living conditions frequently involve changes in modes of life and arouse the resistance of the more traditional minded members of the society. A study of resistance to change to housing conditions investigated the relation of traditionalistic-modernistic attitudes to personality and background traits and to actual change in different areas. An index of traditionalistic-modernistic attitudes correlated with a role playing test for creativity and a sentence completion measure of readiness for positive action (adient behavior), thus indicating that this attitude reflected personal-

ity traits. These measures of traditionalistic attitudes and conservative personality were related to actual mobility in several fields, such as leisure time activities, and especially to acceptance of residential mobility.

Division 12. Psychopharmacology

10:00-10:50. South American Room, Statler JOSEPH ZUBIN, Chairman

10:00. The effects of ataractic therapy on conditioning rate of GSR in a group of psychiatric patients. Lonnie E. Mitchell, VA Mental Hygiene Clinic, Washington, D. C.

Sixty-nine psychiatric patients, 33 control, 36 experimental, evaluated for anxiety level, were subjected to personality questionnaire evaluation and GSR conditioning before and after 30 days of ataractic therapy. Analysis of acquisition and basic skin resistance measures showed that ataractic therapy has a highly statistically significant effect on GSR conditioning (p < .001). Schizophrenic subjects showed a highly statistically significant effect in GSR conditioning after ataractic therapy (p < .001). Pre-post changes in the experimental-control groups showed significant net differences in the Winne Scale (p < .001). Results suggest that ataractic therapy affects low anxiety subjects on conditioning in about the same proportion as it does high anxiety subjects.

10:10. The effects of chlorpromazine and secobarbital on the reaction times of chronic schizophrenics. Ronald D. Wynne and Conan Kornetsky, National Institute of Mental Health.

Twelve male schizophrenics were given a simple visual reaction time test (RT) after oral administration of chlorpromazine and secobarbital. RT was tested under two conditions: irregular, where preparatory intervals were presented randomly, and regular, where the same preparatory intervals were given in consecutive order. Results indicated that secobarbital tended to improve performance, while chlorpromazine tended to worsen RT performance. Results are different from those obtained by other investigators who have observed facilitation in schizophrenic psychomotor performance after chlorpromazine, and deficit in performance after barbiturates.

10:20. The effects of an "anxiety reducing" drug on stimulus generalization under experimental stress. IRWIN J. KNOPF, HAROLD WOLFF, AND JUDITH WORELL, State University of Ionia College of Medicine. An attempt was made to test the alleged anxiety reducing effects of an ataractic drug, meprobamate, upon performance under experimental stress. Using a visual-spatial stimulus generalization task, it was hypothesized that the heightened generalization gradient usually observed under stress (electric shock) would not be obtained with performance under the influence of the drug. Results indicated that Ss performing under drug or placebo produce gradients which are similar to one another but different from controls under both stress and nonstress conditions. These results were discussed in terms of the differential effectiveness of drug or placebo for this type of situation.

10:30. Pharmacologically induced total suppression of a classical conditioned response in man. CYRIL M. FRANKS, Neuropsychiatric Institute, Princeton, New Jersey. (Sponsor, R. K. Haddad)

In a classical conditioning experiment with neurotic adults (based on a conditioned avoidance animal study of Pfeiffer and Jenney) it was shown
that a mixture of arecoline and methyl atropine temporarily totally extinguished an established conditioned eyeblink response, whereas neither methyl
atropine alone nor placebo nor "no treatment" had
any effect on the usual curve of extinction. The
function of the methyl atropine is to eliminate those
pronounced and undesirable side effects which occur
when only arecoline is used. This precisely defined
effect of the mixture may be of value in psychotherapy based on the principles of learning or conditioning.

Autonomic drugs, afterimages, and depression. Solomon D. Kaplan, University of Kansas Medical Center.

A comparison of normals with depressed, psychotic patients indicates the latter are desensitized to the differential susceptibility to long vs. short wave length colors induced by accessory autonomic stimulation in normals. As a control for the differential and reciprocal sensitization aroused in normals by ephedrine and prostigmine, color sensitization is induced also by color contrast without differential spectral susceptibility. Retinal adaptation to color contrast controls sensitization systematically in patients. Normals randomly both increase and decrease their greater range of sensitization. Sensitization is the difference before and during each type of accessory stimulus in the brightness threshold of a color's Purkinje afterimage.

Division 16. Roundtable Discussion: Selection of School Psychologists

10:00-11:50. Pan American Room, Mayflower MAY V. SEAGOE, Chairman

Participant:

HARRY B. GILBERT. The selection of school psychologists in the New York City Public Schools.

Discussants: Thomas L. Bransford, Harold E. Mitzel, and Samuel E. Kirk.

Division 8. Symposium: Conscious and Nonconscious Motivation: Theories and Techniques of Assessment

11:00-12:50. Ballroom, Statler

VINCENT NOWLIS, Chairman

Participants:

BRUCE BUCHENHOLZ. Pleasure.

ALLAN F. MIRSKY. Theory and experiments relating social and emotional behavior to brain structures in primates.

RAYMOND B. CATTELL. The possibility of measuring conscious and nonconscious motivation.

CLAUS BAHNE BAHNSON. Conscious and nonconscious emotion and their relation to ego defenses, regression, and symptom formation: Some new techniques of assessment.

Division 12. Diagnosis

11:00-12:50. South American Room, Statler JOSEPH M. MASLING, Chairman

 Diagnosis in terms of effects. E. LAKIN PHILLIPS, National Orthopedic and Rehabilitation Hospital.

It is suggested that diagnosis (and therapy) be based on a circular notion of "cause" rather than a one-dimensional or historical notion. Controlling the effects of behavior will act to change the meaning of behavior, our understanding of cause; and greater control and prediction can presumably be realized. An analogue with servo or mechanical feedback systems is proposed which takes account of "external" regulating factors and does not depend so exclusively upon internal regulating factors as does depth psychology diagnosis and therapy. Some contrasts with psychoanalytic depth psychology and nondirective therapy are suggested.

11:10. The effect of item style on frequency of endorsement and social desirability. ARNOLD H. Buss, University of Pittsburgh.

The problem was to investigate the effect of item style on frequency of endorsement and social desirability. There were 10 item contents, all concerning aggression. Each item was written in seven different styles, i.e., content preceded by trouble controlling, can't help, feel guilty about, tempted to, like most people, must admit, or nothing. The 70 items (10 contents, 7 styles) were scaled for social desirability, and frequencies of endorsement were obtained. Only the guilt style affected social desirability. Various item styles yielded different frequencies of endorsement and different correlations between endorsement and social desirability.

11:20. The utilization of diagnostic information by psychotherapists. Martin Lakin and Morton A. Lieberman, Northwestern University Medical School and University of Chicago.

The problem was to study in what ways and to what extent therapists utilize information from intake psychiatrists, social workers, and psychologists in altering original views of patients. Eighteen psychoanalytic psychiatrists Q sorted descriptions of the same patient three times following increments of information from these sources. Analysis of the data showed that changes in therapists conceptualizations were exclusively on a health-illness dimension. Any type of information acts as releaser mechanism for therapists' theoretical bias without regard to actual content or source of the information provided, Reconsideration of the validity and utility of the team approach is indicated.

11:30. Cues influencing judgment of personality characteristics. Ernst G. Beier and John Stumpf, University of Utah.

In judging another's personality characteristics one uses various cues, generally without ever recognizing the cues themselves. Different characteristics are likely to be judged from different cues, and some cues may afford more information than others. Here accumulative information conveyed by successive presentation of four cues (voice, gestures, face, and social interaction) was evaluated with ratings on the following characteristics: intelligence, affective tone, sociability, productivity. Questions were asked with regards to relationship among ratings, the influence of additional cues on ratings, the significance of the introduction of previous ratings, and the comparison of "first impression" with "long acquaintance" ratings.

11:40. Objective analysis of mental status. DAVID W. BOSTIAN, PHILIP A. SMITH, GERALD L. HOVER, JULIAN J. LASKY, ROSALIE GING, AND JOHN REIDA, VA Hospital, Ann Arbor, Michigan and VA Central NP Research Unit, Perry Point, Maryland.

Impressed by the importance of quantifying the results of the initial psychiatric interview (mental status examination), which serves as a basis for diagnosis and prescription of therapeutic procedures, the writers developed an objective inventory consisting of 60 items. To determine the practical and theoretical contributions of such an inventory, independent psychiatric judges rated 68 acutely ill or remitted patients. The scales were then intercorrelated and factor analyzed. The results showed eight clusters of symptoms and personality traits which differ considerably from the categories of human functions used in the typical psychiatric examination. The findings are compared with studies by Eysenck, Lorr, Wittenborn, and others; and implications are drawn for personality theory.

11:50. Sex differences in intelligence. John A. Miele, Bellevue Psychiatric Hospital.

The standardization population of the Wechsler Adult Intelligence Scale (WAIS) was employed in order to investigate the influence of the sex factor in intellectual performance and its significance in the appraisal of intelligence. It was hypothesized that there would be no significant differences between the sexes in general intelligence. It was further hypothesized that there would be real differences between the sexes in certain abilities tapped by the scale. Both hypotheses were confirmed. Other unhypothesized sex differences emerged and were presented.

12:00. Effects of planned changes in interviewer behavior upon interviewee behavior in five diagnostic groups. Joseph D. Matarazzo and George Saslow, University of Oregon Medical School.

This study investigated the effects of planned changes in the interviewer's lengths of silences and lengths of actions (utterances) upon the corresponding durations of silences and actions of five different groups: chronic schizophrenics, acute mixed, outpatients, and 2 normal groups. The method of observation and measurement used was the Interaction Chronograph. The highly significant results (all crossvalidated) indicate that, as the interviewer reduces his 5-second actions to zero-second actions (and correspondingly increases his 1-second silences to 15-second silences), the average duration of silences of all 5 groups shows a marked increase, while the average duration of actions decreases in 4 of the groups (but increases in the schizophrenic group).

12:10. The use of the psychologist-patient relationship in individual diagnostic testing. Theodore Leventhal, Bernard Rosenblatt, Martin R. Gluck, and Howard J. Slepian, Worcester Youth Guidance Center, Massachusetts.

Out of concern for reliability and objectivity in psychological testing, psychologists historically have ignored or minimized the impact of the testee's feelings, thoughts, and attitudes (what we call the "test relationship") upon test productions. More recently, on the basis of experimentation as well as clinical experience, there has been growing recognition that the final test response is not determined solely by the test stimulus and the patient's personality, but is also markedly influenced by the test relationship. The central theme of this paper is that active handling of the test relationship, rather than passive observation, leads to the formation of an interpersonal relationship in which the patient and psychologist are allied for the common purpose of understanding and helping the patient. The paper will present methods of establishing this relationship and of making it a conscious and open contract which the patient feels is relevant and helpful to him. The paper discusses the advantages and disadvantages of this approach, including its effect upon reliability and validity of tests. There is also discussion of the implications for research, psychotherapy, training of clinical psychologists, and interdisciplinary relation-

Division 12. General Clinical Problems

11:00-11:50. Federal Room, Statler

J. A. Morris Kimber, Chairman

11:00. The scientific status of clinical psychology: Some prior questions. ROBERT A. HANSON, Augusta State Hospital.

This is a theoretical paper dealing with a logical analysis of some of the prior questions involved in determining the scientific status of clinical psychology. The language expressing the content of propositions dealing with clinical data is examined. Similarities and differences between the language of clinical psychology and physics determine the scientific status of clinical psychology. An examination of the concepts of operationalism and the philosophical basis for a unity of science indicates that certain aspects of feelings and emotions, as dealt with by a clinical psychologist, appear to go beyond the criteria of scientific methodology.

 Projection, excitement, and unconscious experimenter bias. ROBERT ROSENTHAL, University of North Dakota. Exposing high and low aspiring college men, college women, and male paranoid patients to success, failure, or neutral experience did not change their perception of the success or failure status of other people pictured in photographs. Further analysis suggested an "Excitement Hypothesis" to account for increasing expansiveness in the rating behavior of the success and failure groups while the neutral group's ratings became increasingly more constricted. This hypothesis was verified by further statistical analysis. Additional analysis suggested a phenomenon of "Unconscious Experimenter Bias" whereby E may unconsciously influence S during the data gathering process. Implications for research methodology were discussed.

11:20. The contribution of adult education methods to prevention and treatment in the mental health field. DANIEL I. MALAMUD, State University of New York.

The "Workshop in Self-Understanding" is a 15-week adult education course which shows promise for reaching large groups as a method of preventive community education, as a stopgap form of help for those who cannot obtain immediate psychotherapy and as a means of preparing patients for their role in therapy. Workshop procedures are described; these involve semistructured experiences which are simple, readily amenable to conscious exploration, shared by the group in the immediate here-and-now, elicit sharp individual differences in response, and provoke the group to explore the significance of these differences.

11:30. Implications of homosexuality among Air Force trainees. WILLIAM T. DOIDGE AND WAYNE H. HOLTZMAN, Lackland AFB Hospital, Texas and Hogg Foundation for Mental Health, Texas.

A battery of ten psychological tests, including two original tests, was administered to 80 enlisted airmen divided equally into four groups. Subjects were assigned to groups according to whether they were completely heterosexual, partly homosexual, or markedly homosexual in their psychosexual orientations. Only the markedly homosexual group gave test records that were strikingly different from the control groups, suggesting that markedly homosexual individuals are likely to be suffering from an emotional disorder which is relatively pervasive, severe, and disqualifying for military service. The partly homosexual group gave test records that closely approximated the results of the two control groups.

Division 12 and Society for Projective Techniques. Symposium: The Place of Projective Techniques in the University Curriculum

11:00-12:50. Congressional Room, Statler

ALBERT I. RABIN, Chairman

Participants: Thomas W. Richards and William N. Thetford.

Division 18. Research Reports

11:00-11:50. Cabinet Room, Mayflower JEROME LEVY, Chairman

11:00. Results of psychotherapy in government aided mental hygiene clinics. LAWRENCE S. ROG-ERS, VA Hospital, Denver, Colorado.

Statistics relative to the results of psychotherapy in terms of dropout rates and in terms of improvement were obtained from five State Departments of Mental Health. These results were compared with those obtained from a VA Mental Hygiene Clinic for two successive years. The dropout rate and percent of treated patients who improve are quite similar. Possible reasons for the minor differences are offered. The findings also suggest that these clinics which appear to be most selective (i.e., treat a lower percentage of their referrals) have the highest rate of improvement.

11:10. The prison program and changes in attitudes and self concepts of inmates. Howard M. Cohen, New York University.

The purpose of this study was to evaluate the attitudes and self concepts of inmates in a medium security prison, at the beginning, during, and at the termination of incarceration. The experimental group was tested at a medium security prison at the above stages, while the control group was examined at a maximum security prison. The findings demonstrated that favorable changes in offenders were achieved, while they were inmates of a treatment oriented, medium security institution. In addition, the inmates attained the maximum benefit from such a program by eight months and that continued incarceration produced no further change.

11:20. Attitudes of the "town-community" toward the "psychiatric hospital-community." Stephen Pratt, Dullio Giannitrapani, and Prabha Khanna, Larned State Hospital.

400 townspeople were administered a questionnaire to assess their attitudes toward the "hospital-community" located adjacent to the town. Following areas of attitudes toward the hospital were investi-

gated: clinical, "criminally-insane," social, economic, political. The relationship of these attitudes with certain population characteristics was analyzed. Results indicated significant shifts in attitude between generations (younger, more positive) and significant relationships between positive attitudes toward "hospital-community" and: marital status, income, frequency of contact with hospital. These findings tend to hold for all attitude subareas and are considered in relation to possible determinants of attitudes toward the "hospital-community."

11:30. Application of job element (J scale) method to job analysis and selection of inspectors. Ernest S. Primoff, Test Development and Occupational Research Section, U. S. Civil Service Commission.

The previously validated J scale formula was applied to ratings on a 4-column blank to determine the qualifications of Coal Mine Inspector. Previously, applicants were required to have experience such as superintendent, foreman, or engineer. Now, applicants will demonstrate competence in necessary job elements, regardless of how competence was acquired. Each element will be rated by one or combination of tests, interview, or evaluation of past experience. Harvey Pearce of Bureau of Mines validated test units for a number of important elements and for entire job. Rating guides for interview and experience evaluation will be validated with hired inspectors.

FRIDAY AFTERNOON, AUGUST 29

Division 8. Motivational Factors in Perceiving and Remembering

12:00-12:50. New York Room, Statler HERBERT ZIMMER, Chairman

12:00. Emotional factors in forgetting. George Levinger and James Clark, Bryn Mawr College and Michigan State University.

We hypothesized that forgetting of word associations is related positively to the emotional significance of the stimulus words. A list of 60 "conflict" and "neutral" words was administered to 34 Ss, who gave free associations, while Es measured GSR and association time. Ss then tried to recall their associations. Four months later, Ss again gave free associations to the list and rated the stimuli on "emotionality." Forgetting of associations was related positively to all emotionality indices. Although measures of response variability also were associated

positively with forgetting, partial correlations between emotionality and forgetting supported the validity of our general hypothesis.

12:10. A study of dependency and perceptual orientation. E. K. Beller, Child Development Center, New York City.

The problem was to investigate relationships of two personality variables to selective attention in natural social settings. Hypotheses: 1. Dependent striving will correlate in opposite directions to perceptual orientations toward the human and the physical environment. 2. These relationships will increase when (a) conflict between dependent and autonomous achievement striving is lower and (b) when the environment is less structured. The subjects were 51 middle-class preschool children. Rater and observer reliabilities for measures of dependent and autonomous achievement striving and of perceptual orientations: r = .69 to r = .99. Directions of the main hypotheses were confirmed. The implications of these findings will be discussed.

12:20. Size estimation of pictures associated with success and failure as a function of manifest anxiety. Theodore P. Zahn, National Institute of Mental Health.

Previous research is consistent with the generalization that perceptual accentuation is a function of the personal relevance or importance of the stimulus. This experiment tests the hypothesis that high anxious Ss will overestimate the size of a picture previously associated with failure relative to their judgments of success and neutral pictures, while low anxious Ss will not show this effect. Subjects responded to two pictures in a discrimination task. They were failed on one and succeeded on the other. The sizes of the pictures were then judged from immediate memory by the method of average error. The hypothesis was supported.

12:30. The influence of an affective set on dissyllable recognition thresholds. ROBERT O. HATFIELD, Child Guidance Clinic of Southeastern Connecticut, New London.

An affective set involving threat was induced by coupling electric shock with dissyllables of carefully measured stimulus qualities. The strength and retention of this threat was gauged by the galvanic skin response. The effect of this set on perception was determined by comparing the mean recognition thresholds for two groups of syllables: shock and nonshock. Eighty-six subjects were employed using a subject × treatments design. Significantly lower thresholds were found for the shock syllables which

is compatible with the hypothesis that a measurable relationship exists between motivational factors and perception.

Division 12. Physiological Aspects of Clinical Psychology

12:00-12:50. Federal Room, Statler
CYNTHIA P. DEUTSCH, Chairman

12:00. EEG patterns and behavioral vigilance. Ger-ALD H. SHURE AND MARY-RITA N. HOLTZER, System Development Corporation and McMurry, Hamstra & Co.

Experimentally induced fast components in the EEG are paralleled by a qualitatively apparent, alerted behavioral state. Contrariwise, slow EEG activity is associated with a loss of vigilance, or dull and sleepy reactions. These and related findings suggest that those dimensions of intellectual functioning requiring behavioral vigilance should be differentially impaired in organic patients whose EEGs differ in frequency characteristics. The above hypothesis was explored. Six EEG variables were related to psychometric test data for 393 patients. The findings obtained suggest it is not organicity per se but specific EEG frequency components which are associated with impaired intellectual functioning requiring behavioral vigilance.

12:10. Multiple autonomic nervous system responses to a word association test. T. L. CLEMENS AND M. A. WENGER, University of California, Los Angeles.

Nine ANS variables were recorded on six subjects during a 60-minute presentation of a word association list (one word per minute). In terms of three hypotheses, analysis of the data revealed: (a) A consistent negative correlation between reaction time and level of skin resistance. Other correlations between reaction time and ANS responses were inconsistent, suggesting individual response differences. (b) All variables showed adaptation effects during the stimulus period, predominantly in the direction of decreased SNS reaction. (c) t tests between loaded and nonloaded words revealed few significant differences, due probably to individual response differences and marked adaptation effects.

12:20. Physiological reactivity: A diagnostic aid. HUDSON JOST AND HERDIS L. DEABLER, University of Georgia and VA.

The study reported the development of a composite score of physiological reactivity to be used as a measurement of schizophrenic reaction (S-R) and neurotic tendencies. None of the patients with an S-R diagnosis had composite scores in the normal range. Their scores fell 3 to 6 sigmas below the mean of the control group and suggest degrees o. physiological reactivity which reflect the degree of the S-R. Patients with anxiety diagnoses fell at the other end of the continuum, also suggesting measurable differences in physiological reactivity reflecting the degree of neurotic reaction.

Personality dynamics in torticollis. SIDNEY
 CLEVELAND, VA Hospital, Houston, Texas.

Torticollis or wryneck is a rare and unusual symptom. Scattered reports in the literature present summaries of the psychiatric examination of single cases. No systematic evaluation utilizing psychological tests is found. The present study represents an analysis of projective tests administered to 20 torticollis patients. Rorschach, TAT, and figure drawings were also obtained on a control group of 20 patients with the diagnosis of conversion hysteria involving organs of the body other than the neck. Projective test data of the contrasting groups were analyzed to determine whether hypotheses drawn from the literature concerning personality variables considered important in the etiology of torticollis gained support.

Division 20. Symposium: Age Changes in Skill and Performance, with Special Reference to Transportation

12:00-1:50. Pan American Room, Mayflower John C. Flanagan, Chairman

Participants: Ross A. McFarland, Josef M. Brozek, Anchard F. Zeller, Alfred L. Moseley, Murray Glanzer, and Harry Kay.

APA Board of Professional Affairs and Conference of State Psychological Associations. Meeting of Officers of State Associations: The State Association in 1970

1:00-2:50. Ohio Room, Statler

W. J. McKeachie, Chairman

Participants: Erasmus L. Hoch, E. Parker Johnson, Raymond A. Katzell, and Anne Roe.

Division 8. Factors in Group Identification

1:00-1:50. Pan American Room, Statler

RALPH K. WHITE, Chairman

1:00. Severity of initiation and group attractiveness. Elliot Aronson and Judson Mills, Stanford University and U. S. Army Leadership Human Research Unit, California. The hypothesis tested was that individuals who undergo an unpleasant initiation to gain admission to a group will regard the group as more attractive than individuals who do not undergo an unpleasant initiation in order to become group members. College women, who volunteered to participate in group discussions, listened to a recording which was ostensibly an ongoing discussion by other group members. They then evaluated the discussion. Subjects who read aloud embarrassing material in order to join the discussion group rated the discussion more favorably than subjects who were not required to read the embarrassing material before joining the group.

1:10. Object choice and group development. Eu-GENE A. COGAN AND DAVID SHAPIRO, Harvard Medical School.

Freud defines a group as individuals substituting the same object for their ego-ideal and identifying themselves with one another in their ego. The pattern of development of a training group was studied for 31 meetings in terms of: developing consensus among members on the ego-ideal; developing similarity in other kinds of object-choice (liking, disliking, etc.). The results suggest regular progression towards a common ego-ideal which is fully achieved at the 26th meeting. With the exception of dislike object-choice, the other findings suggest progressively increasing uniformity of object-choice, although unanimity is achieved only for ego-ideal.

1:20. Perception of subgroup power and intensity of identification with a reference group. Homer Chassell Cooper, Montana State University.

This study investigated the hypothesis that an individual's perception of the power of his subgroup within a larger reference group is positively related to the strength of his identification with the larger reference group. Interview data were collected concerning political party affiliations. Each respondent classified himself as a "conservative" or "liberal" Democrat or Republican, stated whether he perceived his own wing as dominant within his party, and described his identification with his party as "strong" or "weak." The data supported the hypothesis: perceived power of one's own faction within a political party is positively related to party identification strength.

1:30. Reference groups in a delinquent peer culture. Seymour Rubenfeld and John W. Stafford, Catholic University of America.

Data were sought to support the hypothesis that the delinquent gang is a reference group in which members create a frame of reference which offers delinquent solutions to their shared socially and psychologically conditioned needs. In a cottage population in a training school for adolescent male delinquents observers identified subgroups. Statistical analyses indicated that these possessed reference group properties; each group operated at its own characteristic and distinguishable level of aggression; boys joined groups similar to themselves in level of aggression; and within groups a normative process existed producing stereotypes of out-group members.

Division 8. Verbal Behavior

1:00-1:50. South American Room, Statler ROGER W. BROWN, Chairman

1:00. Experimentally induced anxiety and speech disturbances. STANISLAV V. KASL AND GEORGE F. MAHL, University of Michigan and Yale University.

Previous studies of patients' spontaneous speech in therapy demonstrated the existence of frequently occurring "normal" speech disturbances. These disturbances correlated positively with independent clinical assessments of anxiety. The present study involved the direct experimental manipulation of anxiety as the independent variable, with the speech disturbances as the dependent variable. Twenty-five experimental and ten control subjects were used. Anxiety was elicited in an interview situation. The results showed a very significant increase in speech disturbances from "neutral" to "anxiety" interview for the experimental subjects. The difference between the control and the experimental group was also significant.

1:10. On the use of "ah" in spontaneous speech: Quantitative, developmental, characterological, situational, and linguistic aspects. George F. Mahl, Yale University.

Although it is not an institutionalized part of our language, "ah" manifests many lawful relations. Each of 82 normal speakers used it, the average rate being once for every ten seconds spent talking. Individuals using "ah" most frequently were weaned early, had strict parents, and have obsessive traits. The frequency of "ah" is less in a face-to-face interview than in a telephone interview. Saying "ah" is associated with decreased occurrence of other influencies in the same sentence. "Ah" does not vary with anxiety, thereby differing from other influencies. These findings contribute to a formulation on the process of speaking.

1:20. A test of the Whorfian theory. John H. Flavell, University of Rochester.

This study tested two closely related hypotheses drawn from the writings of Benjamin Lee Whorf: (a) a verb form of a word connotes more activity than the noun form of the same word; (b) perception of this verb form in contiguity with an ambiguous, briefly seen visual stimulus leads to the perception of more activity in the stimulus than does perception of the corresponding noun form, even though S has no good reason to believe that the words are genuine cues to differential activity in this situation. The first hypothesis was strongly supported by the data; the second was not confirmed.

1:30. Response variability as related to verbal behavior without awareness. James L. Kuethe and Richard A. Wunderlich, Johns Hopkins University.

This study investigated the determinants of verbal behavior without awareness. After avoidance learning, the subjects were classified into two groups on the basis of their ability to recall their punishment responses. There was no difference between the groups in rate of learning nor did the groups differ in their ability to identify the critical stimuli. It was found that the subjects who were "unaware" of their punished responses responded to the stress with a greater variety of avoidance responses than did those subjects who were able to recall their punished responses. The conclusions were supported by reaction time data.

Division 8 and American Catholic Psychological Association. Symposium: Current Concepts of the Authoritarian Personality

1:00-3:50. Ballroom, Statler

WILLIAM C. COTTLE, Chairman

Participants:

MAGDA B. Arnold. Theoretical analysis of the concept of the authoritarian personality.

BOYD McCANDLESS. Child rearing practices, social class, and the authoritarian personality.

MILTON ROKEACH. Open and closed orientations toward authority.

PAUL HANLEY FURFEY. The authoritarian personality in a democratic society.

Discussant: RAYMOND J. McCALL.

Division 12. Symposium: Pseudoneurotic Symptoms in Psychosis

1:00-2:50. Federal Room, Statler

GORDON F. DERNER, Chairman

Participants: James P. Cattell, Emilian Gut-Hell, O. Hobart Mowrer, and Benjamin B. Wolman.

Division 12. Symposium: The Role of the Ward Psychologist

1:00-2:50. Congressional Room, Statler BENJAMIN F. McNEAL, Chairman

Participants:

SEYMOUR G. KLEBANOFF. The development of ward psychology programs in neuropsychiatric hospitals.

DAVID S. GOODENOUGH. The role of the psychologist in directing a "relationship therapy" program on a ward emphasizing the use of tranquilizing medication.

PAUL G. DATSON. The research role of the ward psychologist.

Discussant: DAVID W. BOSTIAN.

Division 17. Contributed Papers I

1:00-1:50. Jefferson Room, Mayflower IRWIN A. BERG, Chairman

1:00. Relationships between two projective tests and other variables in a group of high school boys. Phoebe L. Overstreet, Columbia University.

General psychlogical adjustment in 105 ninthgrade boys was assessed by an adaptation of the Rotter Incomplete Sentences Blank and by a new method of scoring the Thematic Apperception Test. ISB and TAT scores were correlated, and correlations with 27 other variables were computed. A significant negative correlation between ISB and TAT scores was obtained. The two tests were significantly related to different variables in the matrix. Results tentatively suggest that for this sample the ISB reflects aspects of adjustment related primarily to the father and his status while the TAT reflects aspects of adjustment related primarily to peer relationships.

1:10. Psychological testing in prisons. Jerome E. Doppelt and Harold G. Seashore, Psychological Corporation, New York.

Seven federal penal institutions and one state prison participated in a project aimed to yield recommendations for more efficient applications of psychological tests to problems of general classification, educational and vocational guidance, personnel placement in prison work, and clinical diagnosis. Test data from several interrelated research units are analyzed. Minimum test programs are recommended for younger and older prisoners to meet the foregoing needs for measurement. Prisoners' performance on tests is compared with norms for "normal" populations. Data suggest that a relatively small

number of group test scores can provide useful estimates of WAIS IQs.

1:20. Multivariate statistical analysis of cognitive and noncognitive factors and use of the analysis in an actuarial-clinical prediction study. P. C. Apostolakos, Duluth, Mesabi and Iron Range Railway Company, Duluth, Minnesota.

Mahalonobis' generalized distance function, D^2 , was utilized to examine the differences, on eight factors, between five occupational groups of preprofessional college students. Rao's multiple discriminant functions were used to classify a cross-validation sample into the five occupational groups (actuarial predictions). Ten counselors classified the crossvalidation sample into the five groups (clinical predictions). The counselors made significantly (P <.01) more correct classifications of the cross-validation sample. Single trial reliability coefficient for ten counselors' classifications was .70. Study involved first use of multiple discriminant functions in an actuarial-clinical prediction study. Meehl's eight criteria for adequate actuarial-clinical prediction studies were fulfilled.

1:30. Construct validity of the MMPI K Scale. CHARLES Y. NAKAMURA, University of California, Los Angeles.

To assess the validity of the K scale, the MMPI was administered under real life stress conditions wherein individuals were highly motivated to present a favorable self picture. Pretest scores under nonstress conditions were available. Test-retest scores for controls were obtained. This study overcomes limitations of earlier ones where the MMPI was administered under simulated conditions or, where administered under natural conditions, lacked adequate control measures. The general hypothesis was that there is a difference in mean uncorrected scores obtained under stress and nonstress, but when the K correction is introduced no difference obtains. Specific hypotheses relating to scales and groups were tested.

Films. Mental Health

- 1:00-4:50. Massachusetts Room, Statler
- 1:00. Borderline. National Film Board of Canada
- 1:35. Profile of a Problem Drinker. National Film Board of Canada
- 2:10. An American Girl. Dynamic Films Inc. and the Anti-Defamation League of B'nai B'rith
- 2:40. The Bright Side. Mental Health Film Board
- 3:10. Home Again. Mental Health Film Board
- 3:50. Bitter Welcome. Mental Health Film Board

- Division 7. Symposium: The Application of Role and Learning Theories to the Study of the Development of Aggression in Children
 - 2:00-3:50. Pan American Room, Statler JOHN SPIEGEL, Chairman
- Participants: L. D. Eron, L. O. Walder, J. H. Lau-LICHT.
- Discussant: I. E. FARBER.

ERICK J. LAWTON.

Divisions 12 and 18. Symposium: Psychologists and Public Service

- 2:00-3:50. South American Room, Statler
- George A. Kelly, Chairman

 Participants: C. Mansel Keene, Milton W. McCullough, Fillmore H. Sanford, and Fred-

Division 17. Contributed Papers II

- 2:00-2:50. Jefferson Room, Mayflower
 - BERNARD MIKOL, Chairman
- 2:00. Assessment of client readiness through typescript analysis by graduate students at the end of a course in counseling techniques. Arnold Buchheimer, Board of Higher Education, New York City.

Two transcripts of initial interviews were submitted to 60 graduate students in counseling and guidance and school psychology at the end of a course in Techniques of Counseling. The students were asked to assess the clients' readiness for short-term counseling, state goals, and make prognoses for counseling outcomes. Counselor trainees and professionals agreed in general in their overall assessment of client readiness. Chi squares were significant at .01 level. They also agreed among themselves and with the professionals in making positive or negative prognoses. Divergence in goal statements, lack of agreement in rationale for assessing client readiness, was found.

2:10. Profile patterns of counselor trainees. Nor-MAN ABELES, Michigan State University.

This study attempts to identify, measure, and compare characteristics of counselor trainees. The subjects were 130 advanced graduate students all of whom had successfully completed the practicum course in counseling. A global rating was obtained on each of these students by having their training supervisors rank them in terms of promised counseling proficiency, from least to greatest. A follow-up of these trainees five years later provided a check

on the external validity of the ratings. Prior to completion of practicum each of the trainees completed an extensive test battery. Results indicated significantly different profile patterns for trainees rated as possessing greater counseling proficiency as compared to those rated as showing less promise.

2:20. An analysis of empathic behavior of counselor trainees in a laboratory practicum. Sara Carter and Arnold Buchheimer, Board of Higher Education, New York City.

Studies on counselor empathy of the past two decades are examined. Implications are drawn for the counselor training process. Empathy is defined as confluent counselor-client behavior in accordance with the original meaning of the term <code>Einfühlung</code>. The behavior of 66 counselor trainees during the initial interview with clients was observed by supervisory staff of a laboratory practicum. Empathic behavior can be rated globally by means of recorded interviews and their typescripts. For training purposes said behavior must be analyzed in relation to its component areas. These areas were found to be: tone, pace, ability to grasp the client's frame of reference, adherence to or abandonment of counselor strategy, repertoire of leads.

2:30. Ethical considerations of applied psychologists. Martin F. Wiskoff, University of Maryland. (Sponsor, Allen R. Solem)

The manner of responding to ethical situations by applied psychologists in Divisions 12, 14, and 17 was investigated. These situations involved divided allegiance conflicts for the psychologist between a client and society. It was found that members of Divisions 14, 17, and 12 were progressively more client loyalty oriented. Differences were also obtained between self-employed and government employed individuals versus those in business and industry, and education, the latter being more society loyalty oriented. A third finding was that Associates with master's degrees disclosed more information to third parties than did those with PhD degrees.

Division 20. Learning and Psychomotor Responses

2:00-2:50. California Room, Statler
NATHAN W. SHOCK, Chairman

2:00. Age and sex differences in swimming speed of the albino rat. James E. Birren and Harry Kay, National Institute of Mental Health and University of Oxford.

Reaction time of the rat to sudden stimuli has been shown to slow with age. The present study examined a serial performance, swimming, to see if there were a comparable age change in repetitive responses. Rats swam 11 ft. 6 in. each trial in a water filled tank; five trials constituted a "run." Reliability was determined from duplicate runs; for fastest trials r=0.90, for medians r=0.92 (N=39). Significantly slower swimming time was found in rats 22–27 months compared with rats 7–10 months; for fastest trials, 12% for females, 14% for males; for median trials, 20% for females, 30% for males. In all instances females were faster than males.

2:10. Swimming fatigue of the albino rat as influenced by age, sex, and practice. HARRY KAY AND JAMES E. BIRREN, University of Oxford and National Institute of Mental Health.

20 old rats (24 months) and 20 young (7 months) were swum for 30 consecutive trials in an 11 ft. 6 in. water tank. The older males were initially slower and fatigued much quicker than all other groups; e.g., began at 11 and ended at 45 secs. The females were always faster than the males and did not fatigue to the same extent; e.g., 9.5 to 25.0 secs. In a further study 24 rats were practiced for one month; all groups improved markedly, the old by 100%. Eserine and benzadrine did not significantly influence the initial times or the fatigue rate.

2:20. Age differences in the acquisition and extinction of the conditioned eyelid response. HARRY W. BRAUN AND RICHARD GEISELHART, University of Pittsburgh.

This study was stimulated in part by a report from Russia by Gakkel and Zinnina to the effect that the eyeblink is difficult to condition in persons over 65 years of age, but when conditioned, it is more resistant to extinction. It was also performed to provide systematic information on the conditioning and extinction behavior of children, young adults, and old adults under the same controlled conditions. It was found that: children and young adults made significantly more conditioned responses than old adults, and resistance to extinction was inversely related to age.

2:30. Timing and choice in relation to age differences in response speed. Joseph F. Brinley, Joseph S. Robbin, and Jack Botwinick, National Institute of Mental Health.

Differences in RT between two age groups (19-28 and 65-81 years) were measured in three conditions: (a) simple RT, (b) choice RT, and (c) a choice situation in which a cue for the appropriate response was given before the stimulus to respond. Preparatory intervals were varied in Conditions a and b.

In relation to age differences in speed of response, variance analyses indicated that preparatory interval played a larger role than the number of choices. The results, therefore, suggest that the elderly are more affected by timing than by choice requirements in simple response situations.

APA Board of Professional Affairs and Conference of State Psychological Associations.
Workshop on Professional Problems: Interprofessional Relationships

3:00-5:50. Michigan Room, Statler

GEORGE S. SPEER, Chairman

Participants: Arthur A. Hitchcock, Andie L. Knutson, Howard E. Mitchell, Guy E. Swanson, Paul Woodring, and Alvin F. Zander.

Division 8. Behavior in Small Groups

3:00-3:50. Federal Room, Statler

MARVIN E. SHAW, Chairman

3:00. The effect upon decisions of experimentally varying the degree of control exercised by chairmen of management committees. LAWRENCE SCHLESINGER, JAY JACKSON, AND JEAN BUT-MAN, University of Michigan.

A laboratory-type field experiment on leader control was conducted with 23 interdepartmental middle-management committees of a large utility company. Experimentally designated chairmen differed in their committee's perception of the degree of control they characteristically exercised. Ratings by participants and observers validated the experimental selection, but chairman interaction profiles did not differ from one another, except when computed as ratios of the total number of acts performed by the entire group. Chairman control was positively related to expert ratings of the quality of group decisions. The relationship was stronger for chairmen previously perceived to be high contributing members of their committee.

3:10. The effect of group structure on the performance of groups engaged in a problem solving task. Morton Goldman, Merlyn E. Bolen, and Randall B. Martin, University of Kansas City.

This study deals with the influence of group structure on the level of performance of a group engaged in a problem solving task. A two-by-two analysis of variance design was employed, where degree of motivation and type of leadership were the two variables examined. A variation of "Twenty Questions" was used for the group problem. Performance was

measured by number of trials and time required to solve problems. Results supported the hypothesis that highest group performance and enjoyment were obtained when all subjects were working for an equal reward and where there was no leader to receive a differential reward.

3:20. Group persuasion under conditions of incubation and varying group size. Robert C. ZILLER AND RICHARD BEHRINGER, University of Delamare

This experiment investigates the conditions which facilitate the ability of a group member (a confederate) who alone knows the solution and the objective method for arriving at that solution to persuade the group. Group size was varied from two to five inclusively. A second experimental condition involved an incubation period in which the groups recessed and were silent for three minutes following the initial four-minute discussion period. The total discussion period under all conditions was 15 minutes. The results indicate that the advocate is more effective in two- and five-person groups rather than three- and four-person groups and under the no-incubation-period conditions (contrary to the hypothesized relationship in the latter case).

3:30. Status consensus, leadership, and group cohesiveness. HARRY P. SHELLEY, University of Nebraska.

Groups of five met eleven times to make recommendations regarding a case history. After the eleventh meeting each member ranked the other members according to their contributions to the group task and indicated their degree of satisfaction with their group (cohesiveness). Degree of agreement on the first rank showed a higher relationship to cohesiveness than did degree of agreement on all ranks (status consensus). The degree of role differentiation (percent participation by the highest ranking member) correlated + .70 with cohesiveness and + .71 with the degree of agreement on the first rank. A negative relationship between leadership sharing and cohesiveness is indicated.

Division 17 Committee on Divisional Functions.
Group Discussion: The Professional Functions and Organization of the Division of Counseling Psychology

3:00-4:50. Jefferson Room, Mayflower HAROLD G. SEASHORE, Chairman

Brief presentation of topics of current concern to the Division of Counseling Psychology, with discussion by divisional members present.

Division 20. Perception and Psychometrics

3:00-3:50. California Room, Statler

BRONSON PRICE, Chairman

3:00. Diotic and dichotic digit spans in relation to age. Alfred D. Weiss, National Institute of Mental Health.

It has been demonstrated that digit span tends to decline with age. Part of the present experiment was designed to elucidate the following aspects of this decline: the effect of the rate of digit presentation and the relation of errors to total score. The other part of this experiment tested for age differences in dichotic digit span presentations, i.e., where a different set of numbers is presented simultaneously to each ear. Results indicate a decline in both diotic and dichotic digit spans with age, the latter disproportionately more than the former.

3:10. Modifying perceptions in relation to age.

Jack Botwinick, Joseph S. Robbin, and Joseph F. Brinley, National Institute of Mental Health.

A test was made of the hypothesis that elderly adults are less able than younger adults to modify or reorganize perceptions. Ss were 74 male volunteers divided equally into two age groups, medians = 71 and 25 years. Each S was presented with Boring's ambiguous figure of "my wife and my motherin-law" and asked what he perceived. After one of the two figures was reported, the alternate figure was suggested by showing an unambiguous version of it. When again presented with the ambiguous figure, more older Ss than younger Ss failed to modify the initial perception and report the alternate figure, thus supporting the hypothesis.

3:20. Inventoried interests of institutionalized aging males. Florence M. Cawthorne, Age Center of New England.

There is little empirical evidence concerning the interests and factors related to the interests of older persons. There has been speculation about the relationship between interests and adjustment in older people and there are results which indicate that interests and activities are positively associated in the aging. An investigation of interrelationships among interest, adjustment, and activities in older people seemed warranted. The study provided data concerning the interests of a group of aging men. It suggested some relationships between interests and other aspects of personality. The use of a standardized inventory indicated that the development of a

measure of interests of older persons would be an important contribution.

3:30. Assessments of adjustment of older adults.

JOSEPH H. BRITTON AND WILLIAM G. MATHER,

Pennsylvania State University.

Various methods for assessing "inner" (personal) and "outer" (social) aspects of adjustment have been utilized with 145 persons 65 or over living in their homes in a rural community: a standardized attitude inventory, items concerning personal-social relations, an activity inventory, selected cards from the Thematic Apperception Test, an opinion conformity scale, ratings of interviews by judges, and ratings of a sample of subjects by a panel of community members. Results from intercorrelations of these criterion measures are presented and discussed in relation to theoretical and empirical problems of assessments of adjustment of older adults.

Division 8. Subliminal Stimuli, Images, and Dreams

4:00-4:50. Congressional Room, Statler HERMAN A. WITKIN, Chairman

4:00. An experimental study of visual sources of dreams and waking images. Lester Luborsky AND Howard Shevrin, Menninger Foundation.

In a pioneer investigation of dream imagery, Poetzl discovered that subjects dreamt about originally unreported (i.e., unnoticed) parts of a tachistoscopically exposed picture. The method appears to be a fruitful one for exploring the nature of subliminal perception as well as contributing to knowledge of the visual sources of dreams and waking images. The present paper is especially concerned with identifying qualities of the subject's recall of the picture that foretell the visual content of his dreams or waking images. It was found that uncertainty in recall was the best indicator of what items would appear in dreams and waking images.

4:10. The effect of subliminal visual stimulation on images and dreams. Charles Fisher and I. H. Paul, Mount Sinai Hospital and New York University.

Can a truly subliminal stimulus influence our images and dreams? Spontaneous images (and later dreams) were obtained from a group of Ss under three conditions: prestimulation (control), subliminal exposure (tachistoscope) of a blank, and subliminal exposure of a simple figure. Thresholds were taken to test for partial cues and discriminability. An objective checklist was applied as well as

a series of "blind" matching techniques. They yielded positive results. Those Ss who showed the greatest effect had the highest recognition and discrimination thresholds and also found the task most difficult. Conditions for enhancing and detecting the effect will be discussed along with its general theoretical significance.

4:20. The effects of subliminal stimuli of aggressive content upon conscious cognition. Morris Eagle. New York University.

Subliminal effects were studied by noting the reported changes in a consciously perceived stimulus which was immediately preceded by another stimulus exposed too briefly to be perceived. Subliminal stimuli (A-stimuli) depicting aggressive and nonaggressive actions were used. The consciously perceived stimulus (B-figure) was a drawing of the boy engaged in the above two actions. Results showed that the A-stimuli differentially affected responses to B-figure, as measured by ratings, drawing, and latency. These results were interpreted to support the formulation of registration and perception as independent processes. Other theoretical implications were discussed.

4:30. Is there discrimination without awareness? Franklin H. Goldberg and Harry Fiss, New York University.

Studies claiming to have demonstrated "discrimination without awareness" have overlooked the possibility that partial recognitions may have accounted for better than chance discriminations. To test this hypothesis, guesses in response to tachistoscopically exposed geometric figures were elicited under two experimental conditions: where parts of the figure were discriminable, and where no parts of the figure were discriminable. Correct guesses reached marginal levels of significance under the first condition. Under the second, correct guesses were no better than chance. The results suggest that reported findings of "discrimination without awareness" occurred because parts of the stimuli were discriminated and served as cues for identification of the whole figure.

Division 12. Symposium: Report of the Washington Conference on Research in Psychotherapy

4:00-5:50. Ballroom, Statler

WILLIAM U. SNYDER, Chairman

Participants: ELI RUBINSTEIN, HANS STRUPP, DAVID HAMBURG, ALLEN T. DITTMAN, AND MAURICE LORR.

FRIDAY EVENING, AUGUST 29

APA Board of Professional Affairs and Conference of State Psychological Associations.
Workshop on Professional Problems: The Role of State Associations in Enforcement of Ethical Codes

8:00-9:50. Ohio Room, Statler

Albert J. Harris, Chairman
Participants: Ralph W. Heine, J. McV. Hunt,
and Bruce V. Moore.

Division 15. Invited Addresses: Modern Education in Perspective

8:00-9:50. Federal Room, Statler

WARREN G. FINDLEY, Chairman

JOHN H. FISCHER. The Function of the Modern School.

LEE J. CRONBACH. Effectiveness of the Modern School.

Discussants: To be announced.

Division 16. Symposium: The Supervision of School Psychologists

8:00-9:50. Pan American Room, Mayflower Brian E. Tomlinson, Chairman

Participants:

MERRILL T. HOLLINSHEAD. The supervision of psychologists in the Newark Public Schools.

WILLIAM A. SIVERS, JR. The state education department and the problem of supervision of school psychologists.

SIMON S. SILVERMAN. The supervision of psychologists in the New York City Public Schools. EDWIN SINGER. Supervision of the isolated school psychologist.

SATURDAY MORNING, AUGUST 30

Division 8. Independence and Conformity

9:00-9:50. Federal Room, Statler

EDGAR H. SCHEIN, Chairman

9:00. Independence and conformity as a function of the validity of group judgment. MARVIN J. FELDMAN AND MARVIN GOLDFRIED, University of Buffalo.

The purpose of this study was to discover the extent to which subjects choose equally correct alternatives which differ from majority group choices when the majority choices have been established as invalid or valid. Under the former condition, independence or yielding when the majority was wrong correlated highly with a choice of alternatively correct responses when the majority was right. Under the latter condition where the majority always made correct choices, subjects still chose in large number valid alternatives when available.

9:10. The acquisition of imitative and opposition responses under two conditions of instruction induced "set" and two levels of reward. John T. Lanzetta and Vera T. Kanareff, University of Delaware.

Several investigators have found little acquisition of imitative responses in adults Ss even when such responses are instrumental to goal achievement. The present study tests the general hypothesis that the rate and level of acquisition of imitative or opposition responses is a function of the instrumental value of the response and the expectation of positive or negative sanctions for the behavior. Two instruction induced sets differing in the extent to which "guilt" for imitative responses is elicited and two conditions of reward, a reinforcing light and light plus money, were used. The results support the general hypothesis: imitation (and opposition) occur under both reward conditions with positive sanctions whereas they occur only under high reward conditions with negative sanctions.

9:20. An experimental study of resistance to influence. Sheila G. Zipf and John R. P. French, Jr., University of Michigan.

This experiment investigates the effects of coercion, reward, and differences in the arousal and strength of a need for independence on conformity. The resistance forces produced by an influence attempt are predicted to vary with the type of influence and the independence needs of the receiver of influence. Rewards and fines were found to produce expected differences in resistance, acceptance of information, and attitudes toward the situation and power figure, but no difference in conformity until the subjects felt that sanctions had stopped. Strong needs for independence were found to produce less conformity after several demands by the power figure.

9:30. Personality correlates of susceptibility to influence by communications of majority opinion. BERT T. KING, U. S. Naval Medical Research Laboratory.

The Bell Adjustment Inventory and communications of the majority opinions of parents, teachers, and students were administered to 254 subjects. A measure of susceptibility to opinion change with a reliability of .70 was obtained. Analysis of Bell item responses against the opinion change criterion yielded a key with a validity coefficient of .43. The significantly discriminating items indicate that the high opinion change group tends to approach and relate to other people, to be concerned with poor health, to experience depressive affect and overt anxiety. These results are relevant to the theories of Horney and Reisman.

Division 8. Self-Attitudes

9:00-9:50. New York Room, Statler JOAN H. CRISWELL, Chairman

9:00. Additional investigations of some aspects of empathic behavior. Erwin Singer and Leonard M. Berkowitz, City College of New York and Plainview Schools, New York.

This paper deals with the interpretation of data collected subsequent to a previous report. At that time one of the authors stated that data collected justified the conclusion that exact awareness of one's personal standing with associates may be viewed as an index of defensiveness. New investigations, varying the setting in which empathy was studied, require a modification of above conclusion. It is now concluded that exact knowledge of one's personal standing can be viewed as such an index of defensiveness only if and when such awareness is inappropriate to the realistic demands of the setting, reflecting then over-alertness and suspicious, watchful observation.

9:10. Social desirability on a measure of self concept. EMORY L. COWEN AND PHOEBUS TONGAS, University of Rochester.

This study tests the hypothesis that there is a substantial relationship between endorsement of a trait descriptive adjective as part of one's self concept or concept of ideal self, and its social desirability value. Social desirability norms were established in an earlier study for 209 trait descriptive terms including 49 which comprise the Bills Index of Adjustment and Values (self concept measure). In the present study 100 additional Ss completed the Bills as ordinarily administered in personality studies. Mean endorsement for self concept correlated .91 with social desirability while for ideal self this correlation was .96.

 Expectation, performance, and self-evaluation. HAROLD B. GERARD, Bell Telephone Laboratories, New Jersey. It was hypothesized that (a) comparing his performance with that of others will have a greater effect upon an individual's self-evaluation when there is conflict between his expected performance and his actual performance as compared to a situation where no such conflict exists, and (b) the anticipation of having one's performance publicly revealed to the comparison group would tend to heighten the tendency hypothesized in a. An experimental investigation necessitated modification of these hypotheses. While anticipation of having one's score made public enhances the effects of a good performance upon self-evaluation, it produces a resistance to lowering one's score in the face of a poor performance.

9:30. The effects of experimentally manipulated social marginality on the self-esteem of high and low authoritarian subjects. ROBERT G. HAYDEN, University of Pennsylvania.

Employing elements of comparison process theory and the goal gradient hypothesis it was predicted that, irrespective of Ss' degree of authoritarianism, a high degree of marginality in respect to a high prestige group would: (a) lower Ss' self-esteem when the high prestige group made negative personality evaluations of Ss, and (b) increase comparability with the high prestige group while simultaneously decreasing comparability with the peer group. Low marginality was predicted to produce less decrease in self-esteem, more comparability with peers, and less comparability with the high prestige group. Prediction a was confirmed only for high authoritarian Ss, p < .001; Prediction b was confirmed irrespective of authoritarianism, p < .01, although confirmation was stronger for high authoritarians.

Divisions 8 and 9. Symposium: Approaches to the Study of International Conflict

9:00-10:50. Congressional Room, Statler

ARTHUR GLADSTONE, Chairman

Participants:

Kenneth E. Boulding, Compatible and incompatible images of national states,

JEROME D. FRANK. Analysis between the nuclear arms race and the behavior of psychiatric patients.

WILLIAM J. MACKINNON. A theory of interdependence between libertarian and equalitarian processes and its application to international conflict.

ARTHUR GLADSTONE. The conception of the enemy.

Division 9. Symposium: Courageous Behavior in Times of Social Stress

9:00-10:50. South American Room, Statler ELEANOR LEACOCK, Chairman

Participants:

MARTIN DEUTSCH. Courage as a social psychological concept.

KENNETH CLARK. Nine children in Little Rock: Behavior under chronic social stress.

THOMAS F. PETTIGREW. Ministerial courage in racial crisis: The Little Rock case.

MILTON SCHWEBEL. Personality and clinical factors influencing individual expression of courage.

Division 12. Schizophrenia

9:00-11:50. Pan American Room, Statler Sol L. Garfield, Chairman

9:00. Pupillary reactions in schizophrenics and normals. GAD HAKEREM, SAMUEL SUTTON, AND JOSEPH ZUBIN, New York State Department of Mental Hygiene and Columbia University.

Pupillary reactions to light were studied in normals and in acute and chronic schizophrenics. Motion picture photographs on infra-red sensitive film of the course of pupillary contraction and dilation were obtained. The three experimental groups are compared with regard to initial diameter, extent of contraction, time of contraction, peak speed of contraction, and duration of maximal contraction. Significant differences between the groups were found. The differences are discussed in terms of the underlying dynamics of parasympathetic, sympathetic, and central inhibitory influences on the mechanism of pupillary reactions.

9:15. The time sense: Differential effect of series determined anchors on schizophrenics and normals. D. WRIGHT, S. GOLDSTONE, W. K. BOARD-MAN, AND W. T. LHAMON, Baylor University College of Medicine.

Anchor effects upon judgements have a possible psychopathologic analogue in the passivity of the schizophrenic. Previous research demonstrated that schizophrenics overestimate a clock second more than normals. This may be due to the subtle anchors in the psychophysically asymmetrical arithmetic series. Acute, chronic, "in remission" schizophrenics, and normals compared the duration of tones with their concept of 1 sec. The arithmetic series separated patient from healthy groups; no difference was obtained with a log series. Chronic schizophrenics

were more influenced by anchors than the acute. Schizophrenics in remission overcompensate for this effect, and the normals resisted it. A concept formation and frame of reference theory is discussed.

9:30. Factors contributing to positive social interaction among schizophrenics. JACK C. WANGER, New York Hospital, Westchester Division.

This study was designed to determine whether schizophrenics who are socially effective on a ward react in the same manner in a group with patients previously unknown to them. Another objective was to describe the good interactor on the basis of psychoanalytic and Rogerian theory. The data supported the contention that socially effective schizophrenics react favorably in new situations. The failure of the impulse control battery to intercorrelate satisfactorily precluded testing the hypothesis based on psychoanalytic theory. The evidence suggested that, with schizophrenics, Rogers' theory of self-acceptance operates in the opposite direction, i.e., individuals who accepted themselves least interacted most favorably.

9:45. The effects of interpersonal situations on conceptual performance in schizophrenia. D. CRAIG

AFFLECK, Nebraska Psychiatric Institute.

In order to investigate the "affective interference" hypothesis of schizophrenic thinking disorder twelve pictorial concept formation tasks of equal difficulty for normals were developed. The rated intensity of interpersonal interaction portrayed in the context of the tasks varied. The interpersonal stimuli were incidental to solution. Solution depended on finding a simple principle of identity. Early chronic hospitalized schizophrenics rated high on behavioral withdrawal took longer to solve the tasks as the interpersonality of the task context increased. Results indicate that affective factors can further impair the conceptual performance of withdrawn schizophrenics.

10:00. Direct measurement of cognitive deficit in schizophrenia. HAROLD L. WILLIAMS, CHARLES F. GIESEKING, AND ARDIE LUBIN, Walter Reed Army Institute of Research.

Retests on five tests of the Army Classification Battery furnished direct measures of cognitive deficit for 76 male schizophrenics. The average impairment was about 0.25 standard deviation. There was little differential deficit, but Pattern Analysis tended to hold up better than Reading and Vocabulary. A comparison of the schizophrenic patients with 162 controls showed that the optimal linear discriminating function required differential weights for the five tests. The multiple correlation with the dichotomous criterion was .53.

10:15. The prognostic value of spontaneous verbal affect and its conditionability in schizophrenics. Stephanie Pisoni, Kurt Salzinger, and Joseph Zubin, Columbia University and New York State Department of Mental Hygiene.

Affect evoked under conditions of reinforcement and nonreinforcement was related to prognosis in schizophrenia. 77 schizophrenics were given an interview in which E initiated and maintained the patient's conversation by asking general questions. During the first part he gave no reinforcement (i.e., agreed by saying "mmm-hmm," "uhha," etc.). During the second part he reinforced affect statements, and during the third he again gave no reinforcement. The differential reaction to the interviewer's verbal reinforcement (i.e., the ratio of affect statements during conditioning to those during extinction) proved to be prognostic while the spontaneous emission of affect failed to do so.

10:30. Variables in the verbal conditioning of schizophrenic subjects. Leonard Krasner and Leonard Ullman, VA Hospital, Palo Alto, California.

Krasner's story telling procedure for investigating verbal conditioning of schizophrenics was used to study the effect of changing the verbal behavior reinforced and changing the examiners reinforcing the same verbal behavior. Reinforcing a second class of verbal behavior resulted in a significant increase in its use. The same-examiner and changed-examiner groups did not differ on nonreinforcement trials, but under reinforcement the same-examiner group emitted the reinforced verbal behavior significantly more frequently than the changed-examiner group. These results illustrate the significant effect of changing either E or the responses reinforced while the same reinforcing cues and Ss are used.

10:45. An operant-interpersonal therapeutic approach to schizophrenics of extreme pathology. Gerald F. King and Stewart G. Armitage, Michigan State University and VA Hospital, Battle Creek, Michigan.

The operant-interpersonal method was developed as a therapeutic procedure for extremely withdrawn schizophrenics who had not benefited from other therapies. Emphasizing motor responses, the operant-interpersonal method progressed from the simple to the more complex. Initially, simple operant responses were elicited and rewarded (e.g., candy, cigarettes), with increased complexity in terms of psychomotor, verbal, and interpersonal components being gradually introduced as the patient showed progress.

Schizophrenic patients undergoing this form of therapy showed significantly more clinical improvement than similar patients in the following control groups: verbal therapy, recreational therapy, and no therapy. Comparisons on other variables also favored the operant-interpersonal group.

11:00. Effects of an eight-year interval on psychological measures of brain operated (topectomy) schizophrenics. AARON SMITH AND ELAINE F. KINDER. Psychiatric Institute and Rockland State Hospital, New York.

Re-examination after eight years of 28 operated (topectomy) and 24 nonoperated subjects of the New York State Research Project showed statistically significant losses in eight of fourteen psychological test measures. These findings contrast with the original report and those of other studies with a short postoperative interval. Results show that specific site (superior or orbital surface of the frontal lobes), age, length of postoperative interval, and nature of the measure are all related to varying effects of cortical lesions. Studies by von Monakow, Yakolev, Goldstein, Meyer, and others report neurological findings that may furnish external validation for psychological results.

Division 12. Symposium: Cultural Change and the Psychologist as Scientist-Practitioner

9:00-10:50. Ballroom, Statler.

FRANKLIN J. SHAW, Chairman

Participants:

FILLMORE H. SANFORD. The role of the psychologist in a changing society.

JAMES G. MILLER. The psychologist as a behavioral scientist.

HAROLD B. PEPINSKY. The psychologist and psychotherapy.

LEE GUREL. The psychologist and the mental hos-

VICTOR C. RAIMY. Goals in the training of psychologists.

Division 15. Paper Session I

9:00-9:50. Cabinet Room, Mayflower

Junius A. Davis, Chairman

 Relationship between visibility status and certain selected characteristics. Robert L. Egbert, Brigham Young University.

This is a first attempt at learning whether there are personality differences between people who stand out and are readily seen in a group and those who fade into the background. Movies of small groups of

fourth graders were shown to college students with multiple choice sets of stills following. Visibility was determined by the number of college students who recognized the picture of a given S from a group of four. Visibility status does not appear to be related to sociometric status. It is apparently related to sex, permissiveness in the home, and to some adjectives descriptive of behavior.

9:10. Some correlates of pupils' perceptions of teaching behavior. PHILIP H. SORENSEN, Stanford Research Institute.

Differences in the ways in which pupils perceive and evaluate teaching acts may be a partial explanation for diverse pupil responses to teacher behavior. Knowledge of the correlates of variable perceptions should improve predictability of pupils' responses and suggest circumstances for future experimentation. It was hypothesized that pupils' perceptions of "good" and "bad" teaching acts would vary with teacher sex and pupil sex, achievement, social class, and social mobility. Data from 648 sixth and seventh graders in 25 classrooms indicated that the pupil sex, social class, and achievement variables were associated with differential pupil perceptions in nonchance frequencies.

9:20. The effects of various motivational conditions upon learning and retention. LILA CORKLAND SIEGEL, Miami University, Ohio.

The investigation concerned the effects of four incentive conditions upon learning and retention of paired associates. It differed significantly from previous research on the effectiveness of classroom incentives in the employment of learning rather than routine performance as the criterion. Fourth-, fifth-, and sixth-grade pupils were required to learn under incentive conditions variously presented in massed and distributed fashion. Both learning and retention scores were found to be differentially related to the incentives administered, the spacing of trials (and hence of incentives), and the sex and level of ability of the subjects.

9:30. Chemical basis of reading disability: Progress report. Donald E. P. Smith and Patricia M. Carrigan, University of Michigan.

The writers have presented elsewhere a threedimensional, synaptic transmission theory of reading disability which seems capable of accounting for the symptomatology of such problems and, by reference to its endocrine substrate, for many of the social and psychological correlates of such disability. This paper reports exploratory attempts, generated by the model, to modify with drugs certain chemical imbalances thought to cause perceptual and conceptual anomalies underlying reading failure. "Hopeless" cases illustrating certain syndromes are described as they appeared during control periods and after medication with combinations of amphetamines, hormones, and tranquillizers.

Division 15. Symposium: The Identification, Education, and Guidance of Gifted Youth

9:00-10:50. North Room, Mayflower

MERLE M. OHLSEN, Chairman

Participants:

Fred C. Proff. Early patterns of behavior of talented youth.

PAUL WITTY. Educational programs for gifted youth.

Frank Noble. Study of group psychotherapy process with gifted underachievers.

JOHN BROEDEL. The extent to which group psychotherapy improves the mental health of gifted underachievers.

HUGH LANE, Personality characteristics of the scientists.

Division 17. Symposium: Application of Research Techniques to Rehabilitation Agency Operating Problems

9:00-10:50. Pan American Room, Mayflower Donald H. Dabelstein, Chairman

Participants:

LLOYD H. LOFQUIST. Evaluation of referral and placement procedures as they relate to the disabled.

LEE MEYERSON. Referral of disabled persons for vocational rehabilitation by practicing physicians.

ROLAND BAXT. Employer policy versus employer practices in the employment of disabled workers.

MORTON D. BROOKS. A study of factors which affect rehabilitation team functioning.

Discussants: James F. Garrett and Morton A. Seidenfeld.

Films. Experimental

9:00-11:50. Massachusetts Room, Statler

9:00. Learning Discriminations and Skills. Mc-Graw-Hill Text-Films

9:15. Reinforcement in Learning and Extinction.

McGraw-Hill Text-Films

9:30. The Mirror Drawing Technique for Personality Testing. Hans Hahn

9:55. Perception and Apperception in Normal, Neurotic, and Psychotic Individuals. Hans Hahn

10:10. Individual Margins of Safety. Hans Hahn

10:30. Cogwheel, RAND Corporation

11:15. A Study of the Perception of Groups. Joseph Lyons

Division 8. Decision Making and Conflict

10:00-10:50. Federal Room, Statler
HAROLD GUETZKOW, Chairman

 Decision making and conflict. John M. At-THOWE, JR., Emory University.

Conflict resolution was studied as a special case of decision making. The nature of the choice situations, the S's dispositional ways of making decisions, and the difference between individual and dyadic conflict situations were analyzed. The S's task was to choose the most preferable of two competing alternatives. The decision time and decision at the point of indifference between the alternatives were compared. Risk and uncertainty were postulated to account for the differences in conflict behavior shown. Individuals and dyads both behave so as to minimize their expected losses.

10:10. Some personality correlates of decision making under conditions of risk. P. RATOOSH, A. SCODEL, AND J. S. MINAS, Ohio State University.

This study is an attempt to provide evidence for the necessity of incorporation of personality variables in formal models for the prediction of decision making. Risk taking was measured in a gambling situation in which subjects were given objective probabilities for nine alternative bets. The effects on decision making of the following variables were assessed: social class, intelligence, value orientation, fear of failure, chance vs. skill orientation, and needs in areas of achievement, dependence, and heterosexuality as revealed by fantasy material. We interpret as conclusive the experimental evidence for the existence of relationships between personality and risk taking.

10:20. Commitment response strength as a function of imposed delay before a volunteered event. EDMUND S. Howe, University of Maryland School of Medicine.

In two comparable experiments Ss were invited to participate on one specific day (randomly assigned out of four) in an "experiment" (actually nonexistent) involving invariant monetary reward and punishment of strength to be preselected by Ss.

Application of Miller's conflict model led to two hypotheses: The probability that S commits himself to participate will vary inversely with the delay before the experiment; the strength of punishment preselected by S will vary directly with this delay. The first hypothesis was clearly confirmed; the second almost reached a conventional level of significance in both experiments.

 An exploratory study of career decision making difficulty. Тномаз L. Hilton, Carnegie Institute of Technology.

In a longitudinal study of the careers of a sample of graduate students in industrial administration, it was observed that expressed acceptance of career decisions was highly related to the difficulty each S experienced in making his decision and not necessarily related to the appropriateness of the decision. A model of career decision making which involved alternativeness, heterogeneity, perceived instrumentality, and reversibility was derived from cognitive theory. A questionnaire study of 30 students which was repeated with 30 new students the following year generally confirmed the model and suggested revisions of it.

Division 15. Paper Session II

10:00-10:50. Cabinet Room, Mayflower HERBERT S. CONRAD, Chairman

10:00. The relationship of measured auditory discrimination skills and spelling skills. Frances O. Triggs, Committee on Diagnostic Reading Tests, New York.

Many students are leaving formal education without developing skills adequate to meet their future needs. Techniques of teaching spelling vary greatly, but these have included much more emphasis on visual discrimination than on auditory discrimination. Evidence is now available which would encourage psychologists to examine more carefully the relationship of spelling skills to auditory discrimination skills. Much basic research is necessary to further understanding of individual differences in the development of auditory discrimination. This knowledge may be used to help teachers develop improved techniques for teaching spelling. This study reports relationships between auditory discrimination and spelling skills Grades IV through XII.

10:10. Reactions to physical change: A survey of 1,940 respondents. Henry Angelino and Edmund V. Mech, University of Oklahoma and Pennsylvania State University. Self-expressed attitudes and feelings over changes in physique during early adolescence may be used as research data to point up how individuals view their changing bodies. To a very large degree the body is a symbol of the self. Thus how the adolescent views himself and others becomes important in understanding his behavior. Respondents were requested to record anonymously their "concerns" over any aspect of physical change which occurred during their early adolescent years. Despite a number of shortcomings inherent in introspective methods, these documents do provide additional information concerning adolescents' feelings on growing up physically.

10:20. A technique for observing classroom behavior. Donald M. Medley and Harold E. Mitzel, Division of Teacher Education of the Municipal Colleges of New York.

The OSCAR is an instrument with which a relatively untrained observer can record a wide variety of behaviors seen in a half-hour classroom visit. Tryouts were made by six observers in 588 visits to 49 classrooms. Fourteen scoring keys were developed with reliabilities between .60 and .92. A factor analysis revealed wide variations along three orthogonal dimensions, one related to the amount of hostility manifested, one to the relative emphasis on verbal-traditional activities, and one reflecting the amount of pupil initiated activity.

10:30. A comparative summary of nine yearly studies of televiewing. PAUL WITTY, Northwestern University.

This paper will present some results of nine yearly studies of televiewing by elementary and secondary school pupils, their teachers, and their parents. Changes in amount of time devoted to TV, favorite programs, and relationships of televiewing to the pupils' intelligence, educational attainment, reading, and behavior will be set forth. Attitudes toward TV will be presented, and the opinions of the pupils, their teachers, and their parents concerning the educational values of televiewing will be summarized. The study is limited to approximately 2,000 pupils studied each year in the Chicago area.

Division 8. Interpersonal Perception

11:00-11:50. Federal Room, Statler
URIE BRONFENBRENNER, Chairman

11:00. The perception of others as a function of the nature and duration of interpersonal experience. JACOB LUBETSKY AND BRENDAN A. MAHER, Northwestern University. A period of "constructive interaction" has been found to lead to an increase in the perceived similarity between the self and the interacting partner. This investigation reports the influence of the quality of interaction, agreement versus disagreement, and the duration of the interaction upon the perception of similarity. Pairs of Ss exposed to either disagreement, agreement, or no-interaction conditions were required to provide self-ratings on a list of traits and likewise for their partner. Results indicate that the increase in perceived similarity occurs only after agreement interaction and occurs maximally in the first 15 minutes.

11:10. An analytic treatment of two interpersonal perception scores. Edwin B. Hutchins and Fred E. Fiedler, University of Illinois.

Cronbach has recently questioned the advisability of using complex interpersonal perception scores. The presents study is a methodological analysis of two such scores. Results suggest that much of the theoretical significance attached to scores based on self-other comparisons might well be reconsidered. Specifically, the complex interpersonal perception scores, Assumed Similarity between opposites (ASo) and Assumed Similarity to the group (\overline{ASg}), were broken into several simple component scores. These components were in turn related to criteria of group effectiveness and group adjustment. In breaking down \overline{ASg} , a single component related more highly to the criteria than did the complex score.

11:20. Quasi-therapeutic relations among members of small college and military groups. Fred E. FIEDLER, EDWIN B. HUTCHINS, AND JOAN S. DODGE, University of Illinois.

Four related investigations tested the hypotheses (a) that a relationship exists between certain measures of interpersonal perception (Assumed Similarity scores) and level of adjustment, and (b) that Assumed Similarity scores are positively related to improvement in adjustment. Positive correlations were found between Assumed Similarity (AS) scores and level of adjustment. Statistically significant differences were obtained indicating that AS scores are also positively related to improvement in personal adjustment. Aspects of interpersonal relations were thus identified which are correlated with good adjustment and which are conducive to improvement in personal adjustment.

11:30. The application of the methods of bisection and equal appearing intervals to the perception of persons. Stanley A. Rudin, Skidmore College.

In an exploratory study aimed at determining whether methods from psychophysics could be applied to the perception of persons, 56 college students of both sexes were asked to think of the persons of their sex they liked best and least well, then of someone halfway between these, and then of two others bisecting these segments. They described them on two scales measuring "goodness-badness" and "activity-strength-passivity-weakness." When plotted as a function of the perceived person's place on the Liking Scale, perceived badness was revealed to be essentially a straight line, increasing monotonic function of degree of disliking, and perceived persons at the ends of the Liking Scale were seen as higher in activity-strength than those in the middle. Personality and sex influenced the shape and slope of the curves. Possibilities of the method are described.

Division 9 Committee on Desegregation. Workshop of the Society for the Psychological Study of Social Issues

11:00-11:50. Michigan Room, Statler

Daniel Wilner, Chairman

Division 12 and Society for Projective Techniques. Symposium: Current Aspects of the Problem of Validity

11:00-12:50. Ballroom, Statler

EDWIN S. SHNEIDMAN, Chairman

Participants: Donald W. Fiske, William E. Henry, Evelyn Hooker, Kenneth B. Little, Norman L. Farberow, and Paul E. Meehl.

Division 15. Symposium: The Automation of Teaching

11:00-12:50. Chinese Room, Mayflower

ARTHUR A. LUMSDAINE, Chairman

Participants: B. F. Skinner, Ernest Z. Rothkopf, N. A. Crowder, and Sidney L. Pressey.

Discussant: DAVID ZEAMAN.

Division 15. Symposium: The In-Service Training of Teachers

FRANCIS M. HURST, Chairman

11:00-12:50. Cabinet Room, Mayflower

Participants:

WILLIAM W. LYNCH. The need for in-service training of teachers.

ALFRED E. KUENZLI. Some problems of in-service teachers.

EDMUND V. MECH. A reorientation of postulates based upon interprofession comparisons.

CAMERON W. MEREDITH. A realistic philosophy of discipline for the in-service teacher.

Division 17. Symposium: Considerations in Controlling the Duration of Counseling Contacts

11:00-12:50. Pan American Room, Mayflower STANLEY J. SEGAL, Chairman

Participants: OLIVER H. BOWN, BILL L. KELL, BAR-BARA NACHMANN, LEONA E. TYLER, AND MILTON SCHWEBEL.

SATURDAY AFTERNOON, AUGUST 30

Division 8. Perception of the Self

12:00-12:50. Federal Room, Statler
ARTHUR JENNESS, Chairman

12:00. Self-ideal discrepancy changes in repressors and sensitizers. John Altrocchi, Oscar A. Parsons, and Hilda Dickoff, Duke University.

Three hypotheses were derived from self theory, research in psychotherapy, and studies of perceptual defense. Using a sample of 88 student nurses undergoing intensive training in psychiatric nursing, the results support the first hypothesis that such training would result in a decrease in self-ideal discrepancy for the sample as a whole; strongly support the second hypothesis that, before training, sensitizers would manifest greater self-ideal discrepancies than repressors; but failed to support the third hypothesis that, as a result of the training, sensitizers would change in the direction of less self-ideal discrepancy, repressors in the direction of more discrepancy.

12:10. Body image and asymmetry of body reactivity. Seymour Fisher, Baylor University College of Medicine.

This study concerned the hypothesis that an individual's attitudes toward sectors of his body influence the reactivity of those sectors. The hypothesis was tested in terms of the relative GSR reactivity of the right and left body sides. Body image attitudes toward the right and left sides were measured with aniseikonic lens, tachistoscopic, and figure drawing techniques. There is a significant tendency for greatest reactivity to occur on the body side perceived as smallest and weakest. Also, it was shown that over-all body image maturity is significantly

linked with the existence of certain optimum right-left GSR gradients.

12:20. Attitudes toward the self: An attempt for a conceptual clarification. Joachim Israel, University of Stockholm. (Sponsor, Morton Deutsch)

An attempt is made to arrive at a tentative conceptual scheme for the study of problems concerning attitudes toward the self. A survey of relevant literature shows that a multitude of concepts referring to identical or similar phenomena are applied. This prevents the development of a coherent theory. In the paper we define four concepts, which are considered basic for a theory. They are: the self, self-evaluation, level of self-evaluation, and importance of self-evaluation. An attitude toward the self then is considered a function of self-evaluation, its level and its importance.

12:30. Reactions to evaluations by others as influenced by self-evaluations. Morton Deutsch and Leonard Solomon, Bell Telephone Laboratories, New Jersey.

Theories in social psychology assume that the individual likes himself; rather different predictions would be made from the opposite assumption. Thus, a person who dislikes rather than likes himself might respond more favorably to criticism, but less favorably to praise. Experimentally, we created social situations in which the subject was led to like or dislike his performance on a group-relevant task. He was then exposed to either a positive or negative evaluation by a teammate's personality. Results indicate that evaluations of others are influenced by self-evaluations.

Division 12. Perception

12:00-12:50. South American Room, Statler GERALD S. BLUM, Chairman

12:00. Perceptual defense and "prerecognition responsivity" in relation to anxiety, hostility, and internalization. Marvin Zuckerman and Arnold Buss, Indiana University Medical Center and University of Pittsburgh.

Perceptual Defensiveness for "hostile" words and prerecognition responsivity to hostile and neutral words were related to: hostility ratings made from relatives' descriptions of patients, a hostility inventory score, Welch's Anxiety Index, Welch's Internalization Ratio, the Social Introversion scale. No relationship was found between hostility and perceptual measures. Anxiety, internalization, and introversion did not correlate with Defensiveness but ex-

treme "Defenders" were found to be higher than extreme "Sensitizers" on these measures. Prerecognition responsivity was significantly and negatively correlated with Anxiety, Internalization, and Introversion. The results indicate that inhibitory tendencies influence general perceptual-verbal responsivity and defensiveness-sensitization at the extremes.

12:10. Perceptual preferences as a function of personality factors. NATASHA POTANIN, Johns Hopkins University. (Sponsor, Mary D. Ainsworth)

Klopfer postulates that Rorschach "texture" responses (interpreted as responses to details in shading) indicate awareness of affectional needs, and "depth" responses, anxiety about these needs. This was explored by investigating the relationship between preference for geometric forms, varying in detail and depth, and personality measures of dependency and anxiety, under two conditions, normal and stressful. The more dependency on others is acknowledged (implying awareness of affectional needs) the greater is the preference for organized detail. Under stress: (a) low-anxiety Ss increase their preference for two-dimensionality (intellectual defense against affectional anxiety); (b) low-insecurity Ss increase but moderate- and high-insecurity Ss decrease their preference for detail (awareness of dependency).

12:20. A validation study of the Sequential Perception Test. LAWRENCE R. ZEITLIN AND ORMAN E. WRIGHT, JR., University of Louisville.

The Sequential Perception Test, a projective technique using stimuli of graded ambiguity, was administered to matched groups of male and female paranoids and normals. The test consists of seven photographs, each of which has been broken down into a series of seven equally graded steps; the first picture so blurred and vague as to be almost meaningless and the last, the unretouched picture. The pictures were chosen to represent some facets of the areas of adjustment of family, sex, interpersonal relationships, and self concept. As predicted, the identification of pictures involving sex, aggression, and group stimuli occurred significantly later in the picture series for the paranoid group.

12:30. Perceptual effects of amputation in children. LOUISE VAN CORE-CENTERS, University of Southern California.

Within the framework of Schilder's formulation of body image, it was hypothesized that amputation, representing a threat to bodily integrity, provokes anxiety and perceptual defense. Drawings of ampu-

tees and nonamputees were presented tachistoscopically to 26 amputee children. Recognition thresholds were compared with those of a matched nonamputee group. Amputees took longer to recognize an amputee figure, but were quicker to recognize that the difference between figures was the amputation. Nonamputees took longer or never verbalized the concept of amputation. Results are explained as alternate perceptual blocking and sensitivity when the subjects were confronted with anxiety arousing stimuli.

Division 8. Cultural Patterns and Differences

1:00-1:50. Pan American Room, Statler
BERNARD M. BASS, Chairman

1:00. Rigidity, stress, and acculturation. Leonard H. Ainsworth, Johns Hopkins University.

The frequency of rigidity in students of four Uganda secondary schools was found to decrease from the least acculturated to the most acculturated school. This is interpreted as an effect of European education towards self-government as making for increased flexibility in comparison with the influences of the old culture and its reliance on authority and custom. Since rigidity was also found to be more frequent under stress, it is suggested that the stressful frustrations implicit in the acculturation process, together with incomplete acculturation, account for the markedly greater frequency of rigidity among Uganda students as compared with Canadian and British students.

1:10. A cross-cultural comparison of judgments of social desirability. C. James Klett and David L. Yaukey, VA Central NP Research Unit, Perry Point, Maryland and American University, Beirut.

A method of contrasting cultural groups in terms of their judgments of the social desirability of a standard item pool is described. Students at the American University, Beirut, judged items representing Order, Dominance, and Aggression to be more desirable and Affiliation items to be less desirable than did American college students. They judged Dominance and Aggression items to be more desirable and Exhibitionism items to be less desirable than did an American high school group. The college group judged Achievement and Intraception items to be more and Aggression items to be less desirable than did the high school group.

1:20. A comparison of French and American attitudes towards authority. Arnold Meadow, University of Buffalo. In the perspective of seeking an explanation for the frequent turnover of French governments and other French institutional phenomena the theory is proposed that there exists a general attitude of aggression towards authority figures amongst the French population. The theory is subjected to a restricted test by administering an Aggression towards Abstract and Personal Authority test to 78 French university students and a matched control group of American students. A sign test indicates a significantly larger number of French subjects than their American controls express a greater amount of aggression towards both personal and abstract authority figures $(P \le .01)$.

1:30. The American personality: Urban Northeast. DOROTHY K. KEMLER AND EDWARD M. BENNETT, Tufts University.

Over 1,000 urban Northeasterns were asked to assess themselves, their motives and values and their attitudes toward others. From the resultant data hypotheses about the American character are suggested. These tend to form a picture of a relatively fearful and powerless group of people who desire love and success more than fame and fortune. They value that which is youthful and naive. They feel strongly the morality and propriety of the world in which they live.

Division 8. Discussion Group: Recent Developments in Rotter's Social Learning Theory

1:00-4:50. Potomac Room, Mayflower Forrest B. Tyler, Chairman

Division 8. Special Program: Social Psychological Research Approaches in the Study of Schizophrenia

1:00-2:50. Congressional Room, Statler.

HERBERT E. SPOHN, Chairman

Participants:

RICHARD L. BLUMENTHAL. Perceptions of patient roles in hospitalized chronic schizophrenics.

MARVIN HUNTER AND CARMI SCHOOLER. Characteristic patterns of ward behavior in chronic schizophrenics.

CARMI SCHOOLER AND HERBERT E. SPOHN. The susceptibility to social influence of chronic schizophrenics in the formation of perceptual judgments.

LEONARD SOLOMON AND HERBERT E. SPOHN. A method for the systematic analysis of social interaction on a ward of chronic schizophrenics.

Division 9. Symposium: American Behavior in the Presence of Traumatic Information: An Analysis of Civil Disaster, the Korean POW Episode, and Sputnik

1:00-2:50. South American Room, Statler EDGAR H. SCHEIN, Chairman

Participants:

HAROLD L. WILLIAMS. Analysis of civil disaster.

ALBERT D. BIDERMAN. Analysis of the Korean
POW episode.

DONALD N. MICHAEL. Analysis of Sputnik.

Discussants: RAYMOND A. BAUER, JAMES C. MON-ROE, AND HERBERT C. KELMAN.

Division 12. Psychotherapy

1:00-3:50. Federal Room, Statler

EDWARD S. BORDIN, Chairman

1:00. Description of interaction process analysis system for psychotherapy. RICHARD W. BOYD AND CHRISTOPHER T. STANDISH, Harvard Medical School and VA Neuropsychiatric Research Laboratory, Boston

A method for classification of patient communications on a moment-to-moment (process) basis has been developed, which is an interaction model for clinical (psychoanalytic theory) observation and a conceptual tool for research in psychotherapy. Patient utterances (units by sentences) are scored into Classes and Categories. Classes (9) are based on inferences from the "content" pertaining to (a) conditions or constants operative in the patient's approach to his treatment task and (b) the dynamic (theoretical) significance of that content. Categories (21) are the specific conditions within the approach (Class).

1:15. Development and application of a scale to measure process changes in psychotherapy. ALAN M. WALKER, CARL R. ROGERS, AND RICH-ARD A. RABLEN, University of Wisconsin.

Attempting to describe the character of change and movement in psychotherapy, Rogers has presented a conception of a continuum of change in therapy from stasis and rigidity to flow and process in psychological functioning. This conception was utilized for the development and refinement of a seven-stage process scale. The scale considers various aspects of client behavior such as relationships to feelings and personal meanings and manner of "experiencing." Two trained judges, working independently, applied the scale to a series of interview materials. Results indicated satisfactory interjudge

reliability and significant relationships with external validating criteria.

1:30. Ease of communication during psychotherapy. Arnold Bernstein, Henry L. Lennard, and Erdman Palmore, Queens College and Columbia University.

The problem was to examine the relationship between patient evaluation of psychotherapy sessions and the actual character of the communication during those hours of treatment. The first eight months of psychotherapy for eight patients (four therapists with two patients each) were tape recorded and transcribed. After each of three sessions approximately six weeks apart, each patient was asked to rate the ease with which communication proceeded during the session. Some of the results were: Average number of verbal propositions per session spoken by therapists was greater for sessions rated "more easily." Average number of verbal transactions between patient and therapist was greater for sessions rated "more easily." The proportion of questions asked by therapists was less for sessions rated "more easily." Sessions perceived as proceeding "more easily" exhibited an excess of therapist affective propositions over patient affective propositions for the two verbally more active therapists.

1:45. Evaluation of therapy by self-report: A paradox. Jane Loevinger and Abel G. Ossorio, Jewish Hospital of St. Louis and St. Louis State Hospital.

Conventional (as opposed to sophisticated) people have anti-psychological defenses, tend to present stereotyped, idealized, "socially desirable" portraits of themselves on tests, ratings, and interviews. They are legion; so statistical criteria of normality bear their mark. Neither sophistication nor conventionality is necessary or sufficient for good adjustment. But some sophistication is necessary for successful therapy, which operates by producing a more realistic, differentiated self concept. The sophisticated person, neurotic or well, tends not to give stereotyped, idealized verbalizations about himself. Since verbal reports reflect primarily conventionality vs. sophistication, they are questionable for evaluation of therapy.

2:00. The effects of psychoanalytically oriented psychotherapy on levels of frequency and satisfaction in sexual activity. Stanley R. Graham, Long Island Consultation Center, New York.

Information obtained from 123 men and women in psychoanalytically oriented therapy 6, 12, and 18 months, compared with a control group of 64 men and women before beginning treatment, demon-

strated statistically significant increases in frequency of sexual activity and level of satisfaction on the part of those in treatment when compared to the control group. The experimental group also demonstrated contrary patterns of frequency and satisfaction relative to the normal decline to be expected with increasing age.

2:15. Patients' and therapists' definitions of therapist's role. NANCY DEHAAN, University of Chicago School of Medicine.

Outpatients scheduled for once weekly, 18-week psychotherapy with senior medical students reported what they hoped therapist would do in first therapy hour; therapists reported what they expected to do. Most therapists expected to be passively supportive and probing. Many expected to clarify patients' productions, refuse their requests, and be actively supportive and permissive. Most patients wanted therapist to be actively and passively supportive, directive, evaluative, clarifying, and probing. About half wanted therapist to be critical and strict. Therapists were aware of patients' desires for active support, direction, and evaluation, and unaware of patients' desires for strictness, criticism, clarification, and probing.

2:30. Behavior of the psychotherapist. DAVID RIG-LER, Philadelphia Child Guidance Clinic.

The psychotherapist's verbal behavior is accepted as influential on the therapeutic process. This study was concerned with three variables deemed relevant to therapist behavior: the degree to which he structured situations for a patient, the presence of elements conflictful for the therapist, and the therapist's concomitant anxiety reactions. Therapists exhibited significantly higher GSRs when listening to patient responses for which the therapists were conflicted but failed to do so when hearing their own similarly conflicted communications. The association between anxiety and structuring was suggestive but less clear. The study has implications for counter transference and for therapist training.

2:45. Reaction patterns to operationally defined therapist responses. W. LYNN SMITH, Mental Health Clinic, Decatur, Illinois.

Two psychotherapy groups' reaction to two therapist formulation foci on subjects' feelings versus roles was studied. One group was neurotic, the other acting out. Hypothesis anticipated an internal focus on feelings would intensify feelings while external focus on social role would increase awareness of social behavior. The neurotic group made striking hehavioral shifts under the feeling focus, but remained unaffected by role focus. The acting out

group responded to feeling almost identically as the neurotic group, but made distinctly different changes from the neurotic group under role. Results consistent with personality dynamics. Existing direction of conflict was amplified by particular focus.

 Depth of interpretation and verbal resistance in psychotherapy. Joseph C. Speisman, University of California, Berkeley.

Deep, moderate, and superficial levels of interpretation were compared as to their influence on several indices of verbal resistance in psychotherapy. Data were obtained from five consecutive interviews from one case, and from excerpts of 11 consecutive responses from 22 different cases. The results indicated that moderate-depth interpretations were generally followed by lower levels of resistance, and moderate-depth interpretations were associated more frequently with a reduction in resistance from one patient response to the next than were the other two levels of interpretation.

3:15. Quantitative semantic analysis of dream symbolism. C. Scott Moss, State Hospital No. 1, Fulton, Missouri.

This study involves several tests of the psychoanalytic assumption that dream symbols serve a disguise function. Use was made of various hypnotic techniques in the induction and interpretation of dreams. The principal measuring instrument was Osgood's Semantic Differential, a measure of meaning. The idea of symbol disguise was transformed into the testable concept of semantic distance. Comparison was made of the semantic distances between latent and manifest content in three experimental situations and under conditions when he latent content was anxiety stimulating and when it was not. Evidence suggests the same degree of symbolization occurs whether or not the covert content is anxiety arousing.

3:30. The reliability of manifest anxiety evaluations in psychiatric interview situations. E. Joseph Charny, RITA WERTHEIMER, CONSTANCE NEWBURY, AND HARRY ROSS, University of Pittsburgh.

The reliability of psychiatric resident judgments of manifest anxiety of 46 female patients (hospitalized for a variety of psychopathological conditions), observed during diagnostic conferences, was investigated. Observed and reported measures (as well as an overall global estimate of manifest anxiety) were defined and discussed with the psychiatric resident group. Independent ratings on a five-point scale on each of the measures were made immediately following the interview. Using rank correlation pro-

cedures, 18 of 20 observers were found to make significantly reliable judgments of overall anxiety. Too, subcategories of the manifest anxiety scale showed high internal consistency.

Division 12. Symposium: Applications of a General Feedback Theory to Complex Learning, Concept Formation, and Personality Assessment

1:00-2:50. Ballroom, Statler

R. L. McFARLAND, Chairman

Participants:

R. K. CLARK. Conceptual framework of a general feedback theory.

W. T. Powers. An overview of a general feed-back theory.

JACK ARBIT. Complex learning considered from a general feedback standpoint.

C. VANBUSKIRK. Feedback interpretation of the process of concept formation.

R. L. McFarland. Personality measurement within a feedback theoretical system.

Division 15. Paper Session III

1:00-1:50. Cabinet Room, Mayflower Howard B. Lyman, Chairman

1:00. Concurrent validity of the "Warm Teacher" Scales. M. Stephen Sheldon, Jack Coale, and Rockne Copple, Colorado State College.

The adjectives "warm," "friendly," "rapport building," used to characterize teachers favorably on rating scales, need evaluation. One hundred seventy-six lower division students in a teacher training curriculum took four MMPI scales (K, Ho, Pv), and Tp) and the MT.AI. The scores were scaled and summed for each. The ten persons scoring highest and lowest of this group were then given the Study of Values, the Edwards Personal Preference Schedule, the California F scale, the WAIS, and the TAT. The high and low groups were found to differ significantly in intelligence, authoritarianism, and certain manifest and latent needs.

1:10. A note on activities of teachers during childhood and adolescence. DAVID G. RYANS, University of California, Los Angeles.

An approximately representative sample of public school teachers, drawn from the United States as a whole, was studied with regard to childhood and adolescence activities which might be hypothesized to presage later teaching behaviors. Significant t ratios (.05 level) were obtained when means of Teacher Characteristic Schedule scores were compared for groups of teachers reporting participation

and nonparticipation in such childhood-adolescence activities as "read to children" and "took class for teacher." Teachers who had engaged in such activities scored higher on the classroom behavior and attitude scales and indicated more permissive educational viewpoints than the nonparticipating group.

1:20. Motives in selecting elementary and secondary school teaching. Gerhard Lang, City College of New York.

It has been suggested that teaching satisfies certain psychological needs that may differ for individuals who elect to teach at the elementary or secondary level, reflected in motives for choosing teaching. The Lang Scale of Motives for Teaching and the Edwards Personal Preference Schedule were administered to 101 elementary and 87 secondary female teachers, 21–29 years of age, in 16 New York City public schools. Motives emphasized by elementary teachers related to the "mothering" role; those stressed by secondary teachers involved the "director of learning" role. Elementary teachers manifested a greater n Nurturance and lesser n Achievement than secondary teachers.

1:30. The relation between children's perceptions of their teachers' feelings and school behavior.

HELEN H. DAVIDSON, City College of New York. Fifth- and sixth-grade children (N = 170) were asked to respond to 35 trait names in terms of how they thought their teachers felt toward them. These perceptions were compared with teachers' ratings of school achievement and of twelve behavioral characteristics. The higher the achievement rating the more favorable was the child's perception of his teacher's feelings toward him. Children rated as possessing desirable behavioral traits such as cooperativeness perceived their teachers' feelings more favorably than those not so rated. These results, which are statistically significant, suggest that awareness of teachers' feelings may be an important variable in learning.

Division 15. Symposium: Reading and Language Development

1:00-2:50. North Room, Mayflower

ALBERT J. KINGSTON, Chairman

Participants:

DAVID SMILLIE. Language development.

GERTRUDE HILDRETH. Reading and the language arts.

PAUL BERG. Listening comprehension and its relationship to reading.

EMERY P. BLIESMER. Problems of reading vocabulary overlap and control. ROY SOMMERFELD. Perceptual factors in reading.

Donald E. P. Smith. Neurophysiological factors in reading.

Division 17. Symposium: Current Theory in Decision Making

1:00-2:50. Chinese Room, Mayflower

ARNOLD M. BINDER, Chairman

Participants:

EUGENE I. BURDOCK. Some implications of information theory for decision making.

PAUL J. Hoffman. Human judgment as a decision process.

CHARLES R. LANGMUIR. Varieties of decision making behavior.

Frank J. Restle. Learning theory and decision making.

Discussant: JOHN C. FLANAGAN.

Films. Industrial and Personnel

1:00-4:50. Massachusetts Room, Statler

1:00. The Care and Handling of Buyers, Modern Talking Pictures

1:35. Behind the Research Figures. Modern Talking Pictures

2:00. The Inner Man Steps Out. Henry Strauss & Company

2:35. A Little Time for Henry, Modern Talking Pictures

3:10. Here Today, Here Tomorrow. Henry Strauss
& Company

3:30. The Names We Live By. American Steel and Wire Company

3:50. 1104 Sutton Road. Modern Talking Pictures

Division 9. Symposium: Value Conflict in the Professional World: Individual Social Responsibility in an Institutional Era

2:00-3:50. Pan American Room, Statler

L. M. HANKS, JR., Chairman

Participants: Albert Lauterbach, Alfred Mc-Clung Lee, Esther Milner, and H. P. Smith.

Division 15. Paper Session IV

2:00-2:50. Cabinet Room, Mayflower

WILLIAM E. COFFMAN, Chairman

2:00. Psychological health, academic success, and educator values. Garth A. Sorenson and Gerald H. Shure, University of California, Los Angeles and System Development Corporation.

The purpose was to determine whether the goals of college educators are consistent with those of psychological health and how students view themselves in relationship to these goals. Ninety statements, representing student traits and attitudes, were Q sorted. Professors described the ideal college graduate; psychologists, the psychologically healthy student; and academically successful and unsuccessful college students described themselves. Sortings were intercorrelated. Centroid factoring yielded four factors. The educators' "ideal student" was highly similar to the "healthy personality" described by psychologists. Successful students' self-description approximated the "ideal student" and "psychological health" more closely than did self-descriptions of unsuccessful students. Implications are discussed.

2:10. Social referents and self-evaluation. Bertram H. Raven, University of California, Los Angeles.

Elementary psychology students were asked on three successive examinations to estimate their scores, the class mode, and the lowest scores they would still find acceptable. Half the students were given a modal score for male premedical students on each examination. Where no social referent was available, students tended initially to overestimate their scores. The correlation between obtained and predicted scores was very low on the first and second examinations, particularly for those students with low scores. By the third examination, this correlation and accuracy had increased significantly. The social referent contributed significantly toward greater accuracy only on the initial examinations.

2:20. The factored dimensions of a measure of motivation for college students. WILLIAM B. MICHAEL, ROBERT A. JONES, AND W. A. TREMBLY, University of Southern California.

To determine the dimensionality of a motivation measure and the extent to which its factors were predictive of college achievement, 34 items of the USC Inventory of Study Methods and Attitudes that was administered to 236 men and 131 women students were factored along with a verbal aptitude measure and an achievement measure. Six of the same factors were identified for the two samples. For men, three additional factors appeared; and for women, four others. For both sexes the nonintellective factor of freedom from neurotic behavior patterns was the one most predictive of the measure of college achievement.

2:30. The effectiveness of large-group instruction at the university level. Laurence Siegel, Miami University, Ohio. Small classes are becoming a luxury in many universities because of the pressure of increasing enrollment. One solution to the pressure of enrollments is that of simply increasing class size. This paper describes results obtained in equated large and small sections of 15 different undergraduate courses. The criteria investigated were achievement (acquisition of knowledge, critical thinking, and acquisition of course related attitudes) and student attitudes toward the instructor, course, and method of instruction. Although the students do not like large classes as well, they appear to profit from large group instruction to about the same extent as from conventional instruction.

Division 17: Symposium: VA Case Presentation

2:00-3:50. Pan American Room, Mayflower

ROBERT S. WALDROP, Chairman

Participants:

JOHN L. HOLLAND. Predictions from the Strong Vocational Interest Blank.

ALBERT C. CORNSWEET. Psychological data.

MARGARET DANIEL. Social casework contributions.

EUGENE BRODY. Psychiatric aspects of the case. MILTON E. HAHN. Synthesization.

WILLIAM N. Schofield, Clinical prediction in retrospect.

Division 8. Symposium: Research Approaches to Interpersonal Behavior

3:00-4:50. Congressional Room, Statler

SIDNEY M. JOURARD, Chairman

Participants: Paul F. Secord, Ivan D. Steiner, and William C. Schutz.

Division 9. Discussion Group: How Can the SPSSI Committee on International Relations be Most Effective? A Discussion of Present and Proposed Activities

3:00-3:50. Michigan Room, Statler

ALFRED E. KUENZLI, Chairman

Resource People: Herbert C. Kelman and Arthur Gladstone.

Division 12. Symposium: Process-Reactive Schizophrenia

3:00-4:50. Ballroom, Statler

C. L. WINDER, Chairman

Participants:

NORMAN GARMEZY. Two types of schizophrenia: Experimental evidence for a dichotomy, based upon level of premorbid adjustment. Wesley C. Becker. Process-reactive schizophrenia as levels of personality organization: A

genetic approach.

HAROLD J. FINE AND CARL N. ZIMET. Processreactive schizophrenia and genetic level of perception: An experimental report and some speculations.

C. L. Winder. Environmental influences as a potentiating predisposition in process-reactive schizophrenia.

Division 15. Paper Session V

3:00-3:50. Cabinet Room, Mayflower

MALCOLM J. WILLIAMS, Chairman

 Two more self-instructional devices. Leslie J. Briggs, Hughes Aircraft Company.

Two self-instructional devices are described, with illustrations. The devices enable each student to learn factual and technical materials at his own rate, without an instructor's assistance. Questions are presented one at a time; the student chooses his answer from among two to twenty response alternatives. Immediate knowledge of results is given after each response. One mode of operation shows the student the right answers directly. Other modes require overt responses and permit varying speeds of practice and opportunity for error and correction. One device, on each trial, omits items answered correctly on the preceding trial.

3:10. Results vs. costs of correspondence courses. CLARK L. HOSMER, Industrial College of the Armed Forces, Washington, D. C.

The literature shows that correspondence study attracts and holds people whose mental ability is superior to that of resident students, and, when equated with resident groups, they produce results equal or superior to those achieved in resident work. Based on the unit of a student man-hour of work, the cost of providing the Correspondence Course of the Industrial College is less than one-fifth the cost of the Resident Course on which it is based. Thus, the content of the Resident Course for 144 students is cheaply made available to an additional 3,500 productive students.

3:20. Self-determination of mode of learning. New-TON E. JAMES, Air Force Special Weapons Center, New Mexico.

Do individuals who are given learning material by the mode of their preference learn better than individuals who are given the material in a mode unlike their choice? Five hundred and three subjects were divided into groups according to their choice of mode: reading or lecture. Choice groups were divided randomly into treatment groups: one group of which was given reading, the other an identical, but tape recorded, lecture presentation. Test scores indicated that performance of the groups given material in their preferred mode was not significantly different from that of groups which received material in a mode unlike that chosen.

3:30. Comparing pre- and post-training leadership test scores with norms for colonels and federal prisoners and with other test scores. Russell N. Cassel and B. Lynn Harriman, Phoenix Union High Schools and Phoenix College System, Arizona and Federal Reformatory, Oklahoma.

Pre- and post-training scores on two leadership tests for 200 USAF preflight cadets were compared to norms for colonels and federal prisoners, and an intratest score comparative analysis was made to determine degree and direction of change. Additional comparisons were made between the pre- and post-training scores on the leadership tests and pretraining scores on three other tests (social insight, egostrength, and personality needs), and with other data. Significant changes were obtained on the leadership tests in a direction toward the colonels. Also, the younger individuals with least formal schooling profited most from the training.

Division 15. Paper Session VI

3:00-3:50. Jefferson Room, Mayflower ROBERT A. DAVIS, Chairman

3:00. Changes in teachers' attitudes as a function of teaching experience. WILLIAM RABINOWITZ AND IRA ROSENBAUM, Office of Research and Evaluation, Municipal Colleges of New York City.

To study the effects of teaching experience on teachers' educational attitudes, seniors in teacher training programs of four colleges took the Minnesota Teacher Attitude Inventory (MTAI). Three years later 343 subjects, then teaching in elementary schools, again took the MTAI. The two scores correlated .59, with a mean drop of 20 score points (p < .01) from first to second testing. A significantly greater drop in score was associated with teaching experience inside New York City than outside. From an item analysis, the drop in score appears to be due to changes in response set and certain educational attitudes, to be discussed.

3:10. The measurement of children's interests as shown in letters. BARRY T. JENSEN, System Development Corporation.

The present question was: "Can letters to the writer of a newspaper feature for children provide useful and current information on interests?" A secondary, but necessary, question related to methods of analyzing this information. We classified more than 1,200 letters received during two-week periods in March and July. The classification system was based upon an analysis of over 600 other letters. The letters were considered as adequate sources of data because of their sensitivity to seasonal changes, apparent sincerity, and representativeness. The paper will describe the classification system, present data regarding adequacy of the source, and summarize illustrative findings.

3:20. Performance on the ACE of Negro American "early entrants" and "mates" during their college careers. S. OLIVER ROBERTS, Fisk University.

ACE results were obtained periodically during their college career for 60 Negro American "early entrants" (i.e., admitted to college between 1951 and 1954 before completing high school under the Ford Early Admission project) and for 62 regularly entering freshman from their matching "mates." Subsequent gains were large and statistically significant for all subgroups, although early entrants made greater gains. The gain was contributed primarily by improved L scores. These results are contrary to expectations, particularly since these students were originally chosen for superior academic and test performance. These results are discussed for educational planning and the comparison of ethnic groups.

3:30. The acquisition of an incentive by children through discrimination learning in a variety of tasks. EVAN R. KEISLAR, University of California, Los Angeles.

Twenty-two second-grade children learned to give the appropriate one of three responses to a stimulus card. However, S obtained reinforcements only when a discriminative stimulus (a bell and a light) was presented simultaneously with the card. S reached a criterion for three different cards. When a new card was presented, the half of the group for whom the discriminative stimulus was also present gave significantly more nonreinforced responses than did the rest for whom the stimulus was absent. The utility for education of viewing an incentive as a generalized discriminative stimulus of this type is discussed.

Division 17. Contributed Papers III

3:00-3:50. North Room, Mayflower

Donald L. Grummon, Chairman

3:00. Some test biases in a chronic disease population. Leonard V. Wendland and Russell L. Forney, Rancho Los Amigos Hospital, Downey, California.

Standardized tests are frequently employed in the psychological and vocational counseling of handicapped persons. Often this is done without full appreciation of the interactions which may occur as a result of the disability and/or its treatment. To investigate the possibility that extrinsic biases may play an important role in some test responses of handicapped persons, 228 postpoliomyelitic patients were distributed for age, sex, and length of treatment and then administered the Minnesota Multiphasic Personality Inventory and the California Occupational Interest Inventory. Following the analysis of variance of the test responses it was found that certain MMPI and COII scales vary systematically with age and some vary with the length of treatment.

3:10. Transitional aspects in the rehabilitation of mental patients. Theodore H. Salzberg, George F. Seacat, and David B. Wine, VA Center, Los Angeles.

Paper discusses a pilot transitional activity program under the direction of Counseling Psychology in a 2,000 bed VA hospital. The need for patients to go through a gradual convalescent rehabilitation program is demonstrated. The program emphasizes a rehabilitation ward, group therapy, industrial therapy, on-the-job training, paid patient employment in hospital, industry, educational resources of the community, and part-time and full-time off-station employment. This is shown to be effective in reducing the recidivism of mental patients from a national average of 1 in 3 to 1 in 7 for the patients who have been exposed to this program for a 3-6 months' period.

3:20. The relationship between verbal-quantitative ability and certain personality and metabolic characteristics. ELLA M. SANDERS AND OLIVER H. BOWN, University of Texas.

Scores received by 75 male freshmen on the 1957 University of Texas Admission Test were used to divide subjects into three matched groups: those receiving high verbal and low quantitative scores, low verbal and high quantitative scores, and high verbal and high quantitative scores. A battery of three personality instruments (Edwards Personal Preference Schedule, Holtzman Ink Blot Test, and McGuire Q Check) was administered and overnight urine samples were obtained over the testing period. The latter were analyzed for 32 chemical constituents. Results supported hypothesized significant dif-

ferences among groups in both personality and metabolic characteristics. Implication of results for counseling are discussed.

3:30. Predicting response to counseling from a diagnostic interview. Thomas N. Ewing, Univversity of Illinois.

The identification of characteristics of persons which enable them to gain something of value from a psychological counseling process is of both theoretical and practical importance. This study relates diagnostic judgments based on a diagnostic interview to both a judgment of movement during counseling made by the counselor and to type of termination of counseling for 151 clients. Judgments of prognosis and presence of certain types of problems as judged by the diagnostician were most predictive of outcome. The results indicate that certain judgments based on an initial diagnostic interview are predictive of continuation in counseling and movement.

Division 8. Problem Solving and Learning

4:00-4:50. Federal Room, Statler WILBERT S. RAY, Chairman

4:00. An experimental study of the problem-solving process. Sidney J. Blatt, University of Chicago.

To study characteristics of the problem-solving process, 35 PhD chemists were given the John-Rimoldi Problem-Solving Apparatus. A model of the problem-solving process developed from Duncker and Wertheimer delineated three phases of the problem-solving process: an Initial Phase, Lag Phase, and Synthesis Phase. The Initial and Lag Phases consisted primarily of analytic questions about one-to-one relationships. The Synthesis Phase was predominantly complex questions which attempted to integrate information to meet the goal demands. The results support several gestalt assumptions about process characteristics of efficient thinking and indicate the value of separating the problem-solving process into these three phases.

4:10. Cognitive embeddedness in problem solving.

MAURICE HULING AND MARTIN SCHEERER,

Winter VA Hospital and University of Kansas.

The experiment deals with the effect of cognitive embeddedness (one object "hidden" in the meaning of another object, though perceptible) on problem solving. Hypothesis: frequency and time of solution will vary with degree of cognitive embeddedness. 132 college students attempted a simple Kohler-type stick problem. The crucial object, a string for fastening the sticks, was present in twelve conditions of

varying embeddedness; e.g., the string alone hanging on the wall (control) vs. the same string suspending a mirror. Statistically significant results were obtained in the expected direction regarding solution time and/or failure frequencies throughout.

4:20. Tachistoscopic recognition thresholds as a function of differential training. ROBERT L. Sprague, Indiana University.

In the perceptual defense literature, a controversy has arisen over the relative importance of visual versus oral frequency of occurrence of words in determining tachistoscopic thresholds. This study concerns the relative effectiveness in lowering tachistoscopic thresholds of three different kinds of training: reading and pronouncing words (visual plus oral), reading words silently (visual), and hearing and pronouncing words (oral). Training in which the words were visually presented (visual plus oral and visual) significantly lowered tachistoscopic thresholds, but oral training alone did not lower tachistoscopic thresholds significantly.

4:30. The influence of hunger on the learning and retention of food related material. Herbert Levitt and Seymour Epstein, University of Massachusetts.

The purpose of this study was to determine how and if mild hunger at time of learning and at time of later recall selectively influences acquisition and retention of food related stimuli. No selective effect was found in the learning condition. However, a group that learned when satiated and recalled when hungry recalled relatively more food words than a group that learned and recalled when satiated. In comparing groups who learned when hungry, no selective differences were found in over-all recall, but differences did appear in the higher order interaction involving the associative strengths of the stimuli.

SATURDAY EVENING, AUGUST 30

APA Symposium: Does the Past Predict the Future?

8:00-11:00. Ballroom, Statler

EDWIN G. BORING, Chairman

Participants:

Owsel Temkin. The historian between past and future.

GARDNER MURPHY. Extrapolation vs. emergence in the history of psychology.

ROBERT B. MACLEOD. Post hoc, ergo propter hoc. EDWIN G. BORING. Why prediction fails in a predetermined world.

APA DAY, SUNDAY, AUGUST 31

Addresses by the Recipients of the 1957 APA Distinguished Scientific Contribution Awards

9:30-12:00. Ballroom, Statler

JEAN W. MACFARLANE, Chairman

CARL I. HOVLAND. Reconciling Conflicting Results Derived from Experimental and Survey Studies of Attitude Change. EDWARD C. TOLMAN. Performance Vectors: A Theoretical and Experimental Attack upon Emphasis, Effect, and Repression.

CURT P. RICHTER. Rats, Man, and the Welfare State.

Invited Address

2:00-3:30. Ballroom, Statler

SIGMUND KOCH, Chairman

HERBERT FEIGL, Minnesota Center for Philosophy of Science.
Philosophical Embarrassments of Psychology.

Reception for Wives of APA Members

3:45-5:30. Chinese Room, Mayflower

Annual Report to the Members of the APA. Forum and Discussion from the Floor

3:45-5:00. Ballroom. Statler

HARRY F. HARLOW, President

Meredith P. Crawford. APA Finances and the 1959 Budget. Launor F. Carter. Major Decisions of the 1958 APA Council Meetings.

ROGER W. RUSSELL. Annual Report of the Executive Secretary.

APA Distinguished Scientific Contribution Awards

5:00-5:10. Ballroom, Statler

E. LOWELL KELLY, Chairman

American Psychological Foundation Gold Medal Award

5:10-5:30. Ballroom, Statler

ROBERT R. SEARS, APF President

Address of the President of the APA

7:45-9:00. Constitution Hall

LEE J. CRONBACH, Chairman

HARRY F. HARLOW. The Nature of Love.

Reception for Members of the APA

9:15. Congressional Room, Statler

All APA Dance

9:30. Ballroom, Statler

Dress optional

MONDAY MORNING, SEPTEMBER 1

Divisions 1, 9, and 12. Symposium: The Social Scientist and Subliminal Stimulation

8:30-10:50. Ballroom, Statler

JAMES G. MILLER, Chairman

Participants:

James V. McConnell. Subliminal stimulation: An appraisal of recent developments.

George S. Klein. Subliminal stimulation: Influences on conscious thought, imagery, and dreams.

MICHAEL J. GOLDSTEIN. Subliminal stimulation: Its cue value in fantasy.

RICHARD J. CUTLER. Subliminal stimulation: Royal road to the unconscious?

RICHARD BARTHOL. Subliminal stimulation: Ethical issues in the application of subliminal techniques.

ELTON B. McNeil. Subliminal stimulation: Projection of things to come.

APA Board of Professional Affairs and Conference of State Psychological Associations. Workshop on Professional Problems: Legislative Strategy and Tactics

9:00-11:50. Michigan Room, Statler THOMAS M. MAGOON, Chairman

Division 2. Symposium: Psychology in Interdisciplinary Courses

9:00-9:50. Pan American Room, Mayflower CLARENCE LEUBA, Chairman

Participants: Joseph Grosslight, Winfred Hill, Constance Lovell, and Clarence Leuba.

Division 3. Physiological I

9:00-9:50. Ohio Room, Statler WARREN W. ROBERTS, Chairman

9:00. Muscle action potential responses to the reinforcing stimulus in verbal conditioning. Neil D. Kent, Louisiana State University.

The analysis of response acquisition under conditions of random reinforcement in determinate situations in terms of a statistical learning theory by Estes assumes that following incorrect responses a corrective response is made to the reinforcing stimulus. This assumption was investigated by continuously recording action potentials from responding effectors during a prediction experiment with

two response classes and constant reinforcement probabilities. The results indicate that following an incorrect prediction the action potential response to the reinforcing stimulus was greater in the contralateral effector than in the predicting one thus supporting the assumption investigated.

9:10. An electrographic study of the dog during avoidance learning. Robert L. Isaacson and EDWARD L. WALKER, University of Michigan.

Seven dogs were implanted with chronic electrodes in the cortex and subcortex, including the midbrain and hippocampal formation. The dogs were trained to discriminate between two frequencies of clicks. To one they responded by leg lift to avoid shock to that limb. To the other no response was made. Electrical recordings of brain activity were made throughout the training. After training, the dogs were tested under chlorpromazine and morphine. Consistent electrical changes, as a function of training, were found in the hippocampus. Both in the training series and in a given trial the changes occurred before the behavioral avoidance response. Cortical and midbrain reactions were detectable only against the altered backgrounds produced by the drugs.

9:20. Some electrophysiological correlates of conditioning in the monkey. Bernard Beer, Eliot Hearst, Guy C. Sheatz, and Robert Galambos, Walter Reed Army Institute of Research.

Bipolar recordings of electrical activity in some sensory and limbic nuclei of chronically implanted monkeys were studied under several different conditioning procedures. Systematic changes in evoked EEG amplitudes were observed in all the experiments, and these electrophysiological changes were found to be related to the type of conditioning procedure employed. Pavlovian techniques, using both positive and negative reinforcement, showed increased evoked EEG amplitudes to CSs after conditioning, while no such effect was observed during instrumental learning.

9:30. Conditioning and alterations in electroencephalographic activity. John A. Stern, George A. Ulett, and Jacob O. Sines, Washington University School of Medicine and Malcolm Bliss Mental Health Center.

The problem was to investigate electroencephalographic alterations during conditioning. Animals (dogs) were prepared with chronically implanted electrodes over visual and motor cortex. The learning task involved trace conditioning utilizing either a 5- or 10-sec. delay. The unconditioned stimulus

was a flickering light which produced a photic driving response observable in the ECG. The unconditioned stimulus was a shock to the right forepaw. Conditioned responses observed were anticipatory leg lift and alterations in heart and breathing rate. Evaluation of alterations in brain wave activity utilized an electronic frequency analyzer. Our data indicate that alterations in brain wave activity occur during conditioning, a number of types of alterations have been observed including frequency specific responses during the delay period, nonfrequency specific responses during the delay period, and a generalized frequency specific response.

Division 5. Symposium: The Effects of Time Limits on Test Scores

9:00-10:50. North Room, Mayflower

CHARLES T. MYERS, Chairman

Participants:

WILLIAM G. MOLLENKOPF. Time limits and the behavior of test takers.

EDWARD J. MORRISON. On test variance and the dimensions of the measurement situation.

HERBERT A. Toops. A comparison, by work limit and time limit, of item analysis indices for practical test construction.

ALEXANDER G. WESMAN. Some effects of speed in real test situations.

Discussant: HAROLD O. GULLIKSEN.

Division 5 and Psychometric Society. Factor Analysis and Scaling Problems

9:00-9:50. Cabinet Room, Mayflower
J. E. Keith Smith, Chairman

9:00. A discriminant approach to factoring threeway data tables. Robert P. Abelson, Yale University.

Three-way data tables have occasioned perplexity when it is desired to apply some variety of factor analysis. The present paper points out that discriminant functions may readily be applied. A general paradigm for three- and higher-way designs is advanced. The investigator must identify the objects to be discriminated, the agents which underlie or mold these discriminations, and the modes through which discriminations are manifest. The discriminant solution is to form linear combinations of the modes such that the between-object mean square is maximized relative to an appropriate error term, usually the object by agent interaction mean square. This paradigm is applied to designs arising from ratings, experimental studies, and psychological test-

ing. The special characteristics of these applications are discussed. The computations necessary for the discriminant solution are briefly indicated.

9:10. Symmetric factoring. W. A. Gibson, Personnel Research Branch, Department of the Army.

The symmetric factorization F_s of a full-rank symmetric matrix R with unit diagonals is obtainable exactly from its characteristic roots and vectors, and approximately by first estimating side entries in F_s as a constant proportion of corresponding entries in R such that R is well reproduced, then applying a constant proportion of the residuals as correction increments to the initial estimate of F_s , etc. Diagonal values for an estimated F_s come from vector length constraints. Symmetric factoring has advantages in multiple group factoring, rounding error accuracy usually results after the second estimate, and computing speed compares favorably with other methods.

9:20. A comparison of multidimensional scaling and similarity analysis. J. J. Mellinger, Personnel Research Branch, Department of the Army.

In multidimensional scaling, distances between stimuli are first converted to scalar products and then factored. In Ekman's similarity analysis, subjects judge stimulus similarities using an equal-appearing-intervals scale; the similarities are reduced to a maximum of unity; and these "correlations" are factored directly. In this experiment 13 colors (6 red, 4 green, white, gray, and black) were analyzed by the two methods. The Young-House-holder model led to 3 factors: red, green, and brightness (white-gray-black in a line). Similarity analysis resulted in 4 factors: red, green, white, and gray-black. The last two factors were nearly orthogonal.

9:30. Transforming scale values to maximize additivity. Purnell H. Benson, Drew University. Unweighted values from the Thurstone-Jones

convergenced values from the Inurstone-Jones study of additivity of paired comparison scale values are re-examined by a transformation equation: $S' = 1.70 + S + .096 (1.70 + S)^3$, where S is the unadjusted scale value and the constants are determined to maximize scale precision, that is, to minimize the standard error in adding scale values divided by the standard deviation of the scale values. The precision, .09, is significantly better (confidence .999) than .33 for untransformed scale values, and also better (confidence .75) than .12 for the Thurstone-Jones transformation of scale values.

Division 9. Symposium: The Relationship of the Humanities to the Social Sciences

9:00-10:50. New York Room, Statler

FREDERICK WYATT, Chairman

Participants: ROBERT B. MacLeod, Leo LOEWEN-THAL, AND STANLEY HYMAN.

Divisions 9 and 15. Symposium: Subsidized Pluralism

9:00-10:50. South American Room, Statler JOSHUA A. FISHMAN, Chairman

Participants:

MARTIN P. CHWOROWSKY. Implications of publicly subsidized pluralism for group relations problems in America.

ROBERT F. CREEGAN. Problems of permissiveness on the group level.

CHARLES DONAHUE. Religion and state power: The American pattern.

RICHARD PLAUT. The segregational aspects of publicly subsidized pluralism.

MARSHALL SKLARE. Problems posed by subsidized pluralism for American ethnic and religious groups.

Division 10. Research Frontiers in Esthetics

9:00-9:50. California Room, Statler Eugene R. Long, Jr., Chairman

9:00. Rorschach content and the esthetics of form. WILLIAM E. EDMONSTON AND RICHARD M. GRIFFITH, VA Hospital, Lexington and University of Kentucky.

This paper points out striking yet often unnoticed characteristics of Rorschach content which it attempts to explain by relating the shapes of the ink blots to the structure of objects around us. Natural objects (animals, trees, etc.) are compared to manmade objects (automobiles, clothing, etc.) by referring to the importance of geometry in man's constructions, and its absence in nature. Rorschach's plates, corresponding to natural phenomena in that they are nongeometric, may provide a testing ground for an experimental esthetics of form.

9:10. Ensemble music and auditory tracking. Andrew G. Pikler, U. S. Naval Medical Research Laboratory. (Sponsor, J. Donald Harris)

Ensemble music performances can be interpreted as complex auditory tracking in the dimensions of pitch, intensity, and time simultaneously. Some part-

information being always involved, the tracking error can be held at a subliminal level. Charts of information-flow and feedback illustrate various interaction patterns in accompaniment, conducted ensembles, chamber music, etc. Synchronization of live music with prerecorded music is a man-machine system. Of the current solutions (rerecording, subsequent mixing) the dual-track techniques are to be preferred. The possibilities are illustrated with brief duo selections. Pertinent new experimental data on auditory tracking are introduced.

 Aspects of creativity in nonartists. Gerard G. Neuman, University of Utah College of Medicine.

Levels of creative functioning in a nonartist population (medical school personnel), as estimated by tests (Figure Drawing, Flexibility in Scientific Thinking, Peer Ratings of Creativity), are compared with 167 other variables derived from a broad clinical assessment study. The resulting patterns of significant differences are presented and interpreted. Creativity is seen as part of an organismic problemsolving process which expresses itself differently in different individuals and groups. The meaning of particular creativity patterns for people choosing medicine and nursing is discussed, as well as the general concept of creativity.

9:30. On the relations between the psychology of esthetics and clinical psychology. Norbett L. Mintz, Brandeis University.

Now that numerous psychologists are concerned with projective techniques and, more recently, with "expressive" adjuncts to psychotherapy (such as art or dancing), there has been increasing interest in utilizing esthetic techniques to implement clinical procedures. Likewise, psychologists interested in esthetics have increasingly utilized psychoanalytic and perceptual theory in esthetic analysis. These relations primarily have been instrumental. In this paper an attempt is made to show how a noninstrumental concern with these different fields can lead to greater theoretical understanding of both esthetics and personality.

Divisions 12 and 17. Symposium: Religion, Ethics, Science, and Psychotherapy

9:00-10:50. Chinese Room, Mayflower

WILLIAM M. GILBERT, Chairman

Participants:

ORVILLE WALTERS. Metaphysics, religion, and psychotherapy.

CHARLES A. CURRAN. The interrelationship of the psychotherapeutic processes and ethical sciences. EUGENE I. BURDOCK. The empirical basis of psychotherapy.

WILLIAM M. GILBERT. A positivistic approach to ethics, science, and psychotherapy.

Division 14. Paper Reading I

9:00-9:50. Pan American Room, Statler EDWIN A. FLEISHMAN, Chairman

9:00. Behavior check list criteria. MILTON RICH-LIN, ARTHUR SIEGEL, AND PHILIP FEDERMAN, Applied Psychological Services.

The development of behavioral criteria, utilizing test construction principles and emphasizing analyzability of the instrument. Two research efforts are described: a Technical Behavior Check List for evaluating post-training performance of graduates of naval air technical training schools; a Critical Incident Behavior Check List evaluating combat leadership of Air Force squadron leaders. The methods and data are discussed in terms of the following problems: defining the behavior universe, techniques of sampling the universe, selecting and evaluating the observers, developing response keys, item analyses, item and total check list scoring, reliability, and validity. Future research possibilities are indicated.

9:15. An evaluation of alternate job designs in relation to employee needs and organizational goals. RICHARD MARKS, Yale University. (Sponsor, Edwin A. Fleishman)

An experiment was carried out in industry to evaluate the effects of a "job centered" approach to the design of jobs in relation to the goals of the organization and the needs of the employees which arose from or which were related to the work performed on the job. Objective measures of performance, questionnaires, and interview data were obtained from experimental and control groups. It was found that manufacturing costs were reduced by providing the employee with increased control over those aspects of the work for which he was assigned responsibility. Attitudes of the employees towards their work and the organization also improved.

9:30. Role variables related to job success and satisfaction. Roger L. Harrison, Procter & Gamble Company.

The study investigated relationships of job success and satisfaction to accuracy of role perception, selfperception in terms of role demands, and ability to perform the role as it is perceived. Influences on the role concept of competing role demands, and of role demands versus self concept were also studied. Job success was related to accuracy of role perception. Self-perception in accordance with role demands was related to accuracy of role perception and to satisfaction. Influences on role concepts of self concept and competing role demands tended to be opposite to those predicted. No other relationships were found.

Division 14. Symposium: Motivation Research: Its Ethics, Relationship to Psychological Theory, and Future

9:00-9:50. Federal Room, Statler

SHELDON S. ZALKIND, Chairman

Participants: Gerhart D. Wiebe, Myron J. Helfgott, and Harry V. McNeill.

Division 17. Contributed Papers IV

9:00-9:50. Jefferson Room, Mayflower DAVID G. DANSKIN, Chairman

9:00. A vivid method of presenting chances for academic success in the counseling of college freshmen. Kenneth W. Eells, University of Illinois.

A method will be described whereby tests yielding a multiple correlation of only .42 can be used to provide dramatically different predictions of college success for different students. The percentage of freshmen in good standing at the end of the first semester varies from 18% for the lowest scoring group to 84% for the highest scoring group. A graphic device will be described by means of which the student's chances of academic success can be presented vividly and effectively, while minimizing the likelihood of the student's interpreting the information as giving a more specific prediction for him personally than is appropriate.

 Freshman interests and concentration field choice. Frances E. Dunn, Brown University.

A discriminant analysis of freshman interest test records for 1322 men and women graduating in 18 concentration fields was made. Discriminant scores were computed for students graduating in the same fields in 1956. Predictions made from a graph of the centroids for the 18 fields in the experimental group resulted in the naming of the correct field or cluster for over half of the validity group. Combining predictions from these *interest* patterns and from ability patterns established by an earlier study

resulted in indicating the correct field for over 70% of the 1956 graduates in the 14 concentration fields compared.

9:20. Predictive and postdictive validity of need achievement measures. Frank M. Lackner and A. W. Bendig, University of Pittsburgh.

To assess the validity of McClelland's hypothesis that projective measures of need achievement relate more closely to future than to past academic attainment, 110 male students in introductory psychology were given a vocabulary test, the Edwards Need Achievement scale, and the four-picture projective McClelland Need Achievement measure at the beginning of the semester. These measures were correlated with two achievement criteria: cumulative quality point average and final letter grade in psychology. Results were opposite to those hypothesized by McClelland and suggest that achievement imagery is the result of past reinforcement history and not an index of current motivational level.

9:30. A hypothesis concerning the relation of a type of underachievement in college to an aspect of self-acceptance and to aspects of normal development. EMANUEL M. BERGER, University of Minnesota.

Using case excerpts for the purpose of illustration, the paper develops a hypothesis concerning a type of underachievement in college and relates it to aspects of personality theory espoused by various writers. The hypothesis is that there is a type of underachievement in which the student, either consciously or unconsciously, prefers not to make a wholehearted effort to achieve, rather than face the possibility that even with his best efforts he may fall short of an undifferentiated positive self concept he has for himself. This is related to inability to accept both limitations in oneself and certain inevitable aspects of living.

Films. Child and Adolescent Behavior

9:00-11:50. Massachusetts Room, Statler (For titles, see Films on Friday.)

APA Education and Training Board. Meeting for Chairmen of Departments Offering Doctoral Training in Psychology

10:00-11:50. Cabinet Room, Mayflower

Division 2. The Teaching of Psychology in the Classroom

10:00-11:50. Jefferson Room, Mayflower John E. Milholland, Chairman 10:00. New uses for the oscilloscope in teaching and research. RALPH H. TURNER, Oberlin College.

A standard oscilloscope can be used to demonstrate: the greater sensitivity of the peripheral retina, the size and shape of the blind spot, a method for measuring visual acuity, the phi-phenomenon, positive afterimagery as a function of stimulus in tensity, stroboscopic phenomena, critical fusion frequency as a function of stimulus intensity, changes in dark adaptation as a function of time, psychophysical methods for determining thresholds, bimanual perceptual-motor coordination, the field concept of movement as a vector of several simultaneously applied forces, and dynamic reversible perspective figures.

 Lecturing versus causing students to learn. Donald J. Mason, University of South Carolina.

Efforts to increase the amount learned in introductory psychology courses have typically ignored or made poor use of established principles in the psychology of learning. Our knowledge of learning phenomena suggests that learning progresses most rapidly when the learner is alert and attentive, when active practice or recitation is required, when reward follows improvements in performance, and when the subject receives immediate knowledge of results. This study compares the lecture method with one in which students spent practically all of their class time taking and correcting examinations over assigned readings.

Students' concept of effective college teaching. Grace M. French, University of Pitts-burgh.

A method of multivariate analysis developed by Horst was employed to discover what teacher characteristics are related to students' high or low opinions of their college teachers. The analysis suggests that effective teaching, from the student's point of view, seems to involve arousal or broadening of interest, which has a motivating or stimulating effect and which is achieved through a clarity of exposition requiring knowledge, ability to illustrate, and to stress or emphasize importance. Another conclusion is that neatness of appearance, friendliness of manner, sense of humor, the giving of individual attention, and the handling of examinations carry little weight in the students' descriptions of effective teachers.

 10:45. Immediate self-scoring means maximum feedback. Clarence F. Willey, Norwich University.

Self-scoring is recommended in many textbooks for the stimulation of learning through immediate knowledge of results, but teachers reject it because they consider it too time consuming and because they believe students cannot score accurately and cheating cannot be prevented. The objective obstacles to self-scoring can be overcome by use of an answer sheet with spaces provided for tying down the examinee's responses in ink. After the examiner has inspected the answer sheet to make sure that all these spaces have been marked to indicate a choice or the omission of a choice, the answer sheet can be quickly scored by the examinee. Little supervision is needed. A simple, easily portable device has been developed to perforate those spaces on the answer sheet representing correct choices. There need be an interval of only a few minutes between completion of examination and knowledge of score. The procedure utilizes for immediate feeding back of corrective data the examinee's own mark sensing and impulse counting potential.

11:00. An exploration in the teaching of critical thinking in general psychology. EDWIN L. LYLE, Greenville College. (Sponsor, Lewis B. Mayhew)

An experiment was designed to discover classroom methods most effective in teaching critical
thinking in general psychology. No significant differences in improved critical thinking skills were
found when "student-centered" methods were utilized as contrasted with "teacher-centered" methods.
However, the "student-centered" methods seemed
more effective with students of high abilities. Conversely, low ability students achieved more in the
"teacher-centered" situation. Students in the
"teacher-centered" section expressed more favorable
attitudes toward the course than toward the instructor. The opposite was true in the "studentcentered" section. These findings are suggested as
hypotheses worthy of further investigation.

11:15. The use of examination scores as dependent variables in teaching method research. MARVIN NACHMAN, University of Colorado.

In research on teaching methods, examination scores are often used as the dependent variable. Since students prepare for these examinations, the uncontrolled variable of extra study may serve to diminish or mask any effects produced by the different teaching methods. Class size was used as the independent variable, and it was predicted that students in a small class would do better than a group of matched students in large classes on "pop-quizzes" but there would be no significant differences on the

final examination for which the students had prepared. The results confirm the predictions and are discussed in relation to other teaching methods research.

11:30. The effect of an introductory course in psychology on self-insight. Frank Costin, University of Illinois.

A self-insight scale was administered to 179 undergraduates before and after an introductory course in psychology, which was part of a two-year general education program. Both men and women students whose scholastic achievement in the course was in the upper half of their class increased self-insight significantly and to the same extent. In the lower half, men also increased self-insight significantly, but women did not change. As a control measure, the same scale was given to 97 students before and after a verbal communication course, also a part of the general education program. No change in self-insight occurred.

Division 3. Physiological II

10:00-10:50. California Room, Statler THOMAS C. CADWALLADER, Chairman

10:00. EEG activity and time judgment. JACK WERBOFF, Wayne State University.

In this study, two measures of EEG activity were related to time judgments of two- and eight-second periods under four conditions of photic stimulation. The results show: groups with more than 50% resting alpha make significantly longer overestimations than groups with less than 50% alpha, EEG frequency during periods of time judgment was inversely correlated with time judgment, experimental alteration of EEG by photic stimulation produced inconclusive results. The general findings are discussed in relation to Hoagland's conceptualization of a cortical metabolic determinant of time judgment with the suggestion that subcortical centers also influence the estimation of time.

10:10. Visual recognition and the phase of the occipital alpha rhythm. REED S. Boswell and Kenneth A. Kooi, University of Utah.

The excitability hypothesis assumes that the alpha rhythm represents a sensory timing mechanism in which the probability of incoming afferent impulses, causing cortical neurones to fire, would vary with the phase of the alpha rhythm. It was deduced that the accuracy of visual recognition would be related to the phases of the occipital alpha rhythm. Block letters of the alphabet, randomly exposed at near

threshold levels of illumination, were presented at six phase intervals of the subject's alpha cycle. The ascending phase interval (0° to 60°) was found to be significantly associated with the accuracy of recognition in 18 normal subjects. The results lend support to the excitability hypothesis.

10:20. Temporal factors in the compound action potential or peripheral somesthetic nerves. WIL-LIAM R. UTTAL, IBM Research Center.

Pulse electrical stimuli are being used to elicit compound action potentials which are recorded with surface electrodes from the ulnar nerve of the arm. Increasing pulse duration not only increases response amplitude, but produces multiple responses for the longest durations—a phenomenon unattainable with any available stimulus magnitude. The refractory characteristics of the compound potential are described and analogies made with the results of individual fiber recordings. Conduction velocity measurements further confirm earlier work which shows that A fibers are being stimulated. The implications of refractoriness on the subjective response are discussed.

10:30. Amplitude of the electroencephalogram and reaction time during sleep. PAUL D. COLEMAN, FLORENCE E. GRAY, AND KYOZO WATANABE, Tufts University.

The correlation between integrated EEG amplitude and reaction time during sleep was found to be +.32 with p < .01. Curves describing integrated EEG amplitude as a function of duration of sleep were also found to follow a trend similar to that described for reaction time by other investigators. Periods of high amplitude EEG tended to be associated with lack of body movement while periods of low amplitude EEG tended to be associated with periods of body movement.

Division 5. Factor Analysis and Its Application 10:00-10:50. Pan American Room, Mayflower ROBERT PERLOFF, Chairman

10:00. Factoring for orthogonal simple structure without rotation. DAVID K. TRITES, U. S. Air Force School of Aviation Medicine.

DuBois has recently proposed a method of factor analysis applicable to intercorrelation matrices containing at least two variables defining each factor. The method does not require communality estimates and apparently yields clear orthogonal simple structure without rotation. These properties were investigated by factoring the two matrices, used in his presentation of the method, by an iterative centroid procedure. Results indicated that his loadings are reproducible by rotation of an iterated centroid solution.

10:10. An improved numerical method for rotation to simple structure. EDWARD E. CURETON, University of Tennessee.

The proposed method improves on Thurstone's "analytical" (actually numerical) single-plane method in four ways: a numerical criterion for the selection of a trial test vector, modification of the trial test vector to obtain a better trial vector, a new procedure for estimating which tests lie in the hyperplane, a simplified least-squares fitting procedure eliminating the use of weights. The near-zero entries in each column of the rotated factor matrix are defined explicitly as those of the tests to which the hyperplane is fitted.

10:20. Statistical tests of hypotheses in confirmatory factor analysis. HAROLD P. BECHTOLDT, State University of Iowa.

The distinction between confirmatory and exploratory factor analysis leads to an identification in confirmatory studies of both "pattern values and oblique coordinates" as partial regression coefficients. The crucial points are, first, prior definition of factors in terms of operations on a specified set of reference variables and, second, separation of variables into reference variables and experimental variables with the differentiation maintained in the calculations as in the multiple group method. Standard statistical procedures then are used to test confirmatory factor hypotheses involving factor (beta) coefficients as well as means, variances, and correlations of factors.

10:30. The identification of adolescent needs by factor analysis of the items of an experimental test, Charles M. Lucas, Cedar Crest College.

An experimental test of 12 needs was administered to all of the in-school adolescents of a community. Responses to individual items were then factored so as to permit those correlated with each other to emerge as factors. Five orthogonal factors were found. That many items of good face validity did not cluster together in the predicted manner suggested the primary importance of establishing item validity in personality test construction. Need factors identified were: Acceptance, Heterosexual response, Independence, Conformity to adult standards, and Achievement in school. The Acceptance factor appeared to include several subcategories of related needs.

Projective Techniques

10:00-11:50. Ballroom, Burlington

BERNARD I. MURSTEIN, Chairman

Participants:

HERBERT K. STONE. The problem of "levels" in psychological testing and personality theory.

NICHOLAS P. DELLIS. Different behavior on different projective tests and its implications for personality theory and psychopathology.

BERNARD I. MURSTEIN. Theories of projective

ZYGMUNT PIOTROWSKI. Factors underlying differences among projective tests.

Discussant: FLORENCE HALPERN.

Division 9. Symposium: The Psychological Effects of Social Change

10:00-11:50. Federal Room, Statler

JOSEPH B. ADELSON, Chairman

Participants:

URIE BRONFENBRENNER. Socialization and social class through time and space.

MERVIN B. FREEDMAN. A study by decades of some attitudes and values held by educated women of the twentieth century.

E. LOWELL KELLY. Attitudes and values reassessed after twenty years.

Discussant: DAVID RIESMAN.

Division 10. Symposium: Influences of Depth Psychology on Literary Criticism

10:00-10:50. Pan American Room, Statler LEONARD F. MANHEIM, Chairman

Participants:

LEONARD F. MANHEIM. Some recent developments in the interdisciplinary field of depth psychology and literary criticism.

PAUL C. OBLER AND JAMES McCLINTOCK. The ages of man: Psychological explorations in literature as seen by an English scholar and a psychologist.

PAUL SWARTZ. Literature as art and as knowledge. SIMON O. LESSER. The appeal of fiction to the psyche of the reader.

Division 3. Conference on the Experimental Analysis of Behavior

11:00-12:50. Congressional Room, Statler

WILLIAM H. MORSE, JOHN BOREN, AND THOM VERHAVE, Chairmen

Division 8. Symposium: Theories Relating to Division 5. Symposium: Views of Construct Validation

11:00-1:50. North Room, Mayflower

DONALD W. FISKE, Chairman

Participants:

JANE LOEVINGER. Some substantive considerations in construct validation.

DONALD T. CAMPBELL. The multitrait-multimethod matrix in the validational process.

HAROLD P. BECHTOIDT. The construct validity of construct validity.

Discussant: PAUL E. MEEHL.

Division 10. Invited Address

11:00-11:50. South American Room, Statler Roy HARRIS. The Creative Process in Music.

Division 14. Symposium: Decision Making Business Games

11:00-12:50. Ballroom, Statler

ROBERT L. CHAPMAN, Chairman

Participants: JOHN L. KENNEDY, THOMAS C. ROWAN, RICHARD H. RAWDON, AND ANDREWS LANG.

MONDAY AFTERNOON, SEPTEMBER 1

Division 2. Symposium: A Consideration of the Impact of Television on Instruction in Psychology

12:00-1:50. Cabinet Room, Mayflower RICHARD I. EVANS, Chairman

Participants: Joseph Grosslight, Fred McKinney, ROBERT R. BLAKE, AND JOSEPH H. KANNER.

Division 2. Symposium: Improving the Teaching of Psychology in High Schools

12:00-12:50. Jefferson Room, Mayflower

T. L. ENGLE, Chairman

Participants:

WATSON DAVIS. Psychology integrated in the high school Curriculum.

HERBERT J. KLAUSMEIER. What are desirable characteristics of the high school teacher of psychology?

MAX M. KOSTICK. Some suggestions for the teaching of psychology in high schools.

Division 3. Animal Behavior I

12:00-12:50. California Room, Statler Winthrop N. Kellogg, Chairman

12:00. Effects of stimulus variation on sexual satiation in the male rat. Alan E. Fisher, University of Pittsburgh.

Previous work on sexual satiation in male rats does not investigate the importance of stimulus novelty in the assessment of sexual capacity. The present study indicates that satiation data from standardized test situations minimizing stimulus variability do not measure sexual capacity or satiation, but reflect adaptation to particular stimulus conditions. During satiation tests in which receptive females are frequently changed, male rats more than double capacity scores obtained in tests with a single receptive female. Data are pertinent to theories of sexual and arousal-adaptation mechanisms and to the valid assessment of sexual capacity in normative and physiological intervention studies.

12:10. The effect of testosterone propionate administered before and after birth upon sexual behavior of male and female guinea pigs. A. A. GERALL, C. H. PHOENIX, AND R. W. GOY, University of Kansas.

The sexual behavior of female and male guinea pigs receiving testosterone propionate before birth, after birth, or before and after birth was compared with that of untreated animals. Androgen given before birth produced female pseudohermaphrodites with masculine external genitalia. They did not exhibit more masculine behavior than untreated female animals. Pseudohermaphroditic and normal female guinea pigs receiving androgen after birth manifested copulatory responses similar to those of normal male guinea pigs. Precocious mounting and intromission were observed in male animals receiving exogenous androgen before birth.

12:20. The influence of food deprivation and activity restriction upon subsequent activity. L. STARLING REID AND FRANK W. FINGER, University of Virginia.

The study compares the influence of 6, 12, 18, and 24 hours of food deprivation upon the subsequent activity of animals either restricted or not restricted in their activity during the period of deprivation. Activity was measured immediately following deprivation for 30 min. by recording the number of times an animal crossed a photoelectric beam in his home cage. Mean activity of the restricted group increased with increasing lengths

of food deprivation, but there was no significant increase in the activity of the nonrestricted group.

12:30. The effects of regeneration upon retention of a conditioned response in the planarian. JAMES V. McConnell, Allen L. Jacobsen, AND DANIEL P. KIMBLE, University of Michigan.

In this study, naive planaria were conditioned, then cut in half and allowed to regenerate. Following regeneration, each half was retrained to initial criterion of learning. Both halves showed equal and highly significant savings of the CR. How the tail sections, which contain no large ganglia, retain anything is a question which poses serious problems to all cortex oriented, learning theories. It is likely, then, that any conditioned response in planaria has no one, unique locus, but is spread throughout the body of the animal.

Division 8. Symposium: Studies of Human Relations Training

12:00-1:50. Federal Room, Statler

MATTHEW B. MILES, Chairman

Participants:

WARREN G. BENNIS. Change and choice in training groups.

JACK R. GIBB. Effects of norm centered training upon individual and institutional behavior.

MORTON A. LIEBERMAN. The relationship between the emotional culture of a group and individual change.

MATTHEW B. MILES. Factors influencing response to feedback in human relations training.

IRVING R. WESCHLER. Inside the trainees' world:

An exploration of the sensitivity training process.

Division 9. Symposium: Social Role versus Social Class Explanation of Social Behavior

12:00-12:50. New York Room, Statler

DWIGHT CHAPMAN, Chairman

Participants: Daniel J. Levinson and Richard Centers.

Division 14. Paper Reading II

12:00-12:50. Pan American Room, Statler
MACELDIN TRAWICK, Chairman

12:00. Background and organizational factors in absenteeism. Howard Baumgartel, University of Kansas. Absenteeism in industry can be viewed as a variable influenced by factors other than illness. This study reports the results of a statistical analysis of the correlates of absenteeism in a selected population of 3,900 nonsupervisory employees in a corporation employing 13,000. The objectives of the analysis were twofold. First, the relationships between absenteeism and a number of background variables such as length of service were explored. Second, the hypothesis that absenteeism is positively associated with plant size was tested. The results indicate a significant positive relationship between absenteeism and plant size and between absenteeism and certain background variables.

 Evaluating a four-year sales selection program. John E. Wilson, Williams and Company, Inc.

During a four-year period, applicants for metal and industrial sales positions were selected following a psychological appraisal based on a test battery and interview. Comparison of the number of new men retained for 3, 12, 18, and 24 months preceding and following the initiation of the use of these appraisals showed a significant reduction in turnover in the latter period. Validity coefficients were computed between the test battery and supervisors' ratings for the office sales groups of 74 men including the men selected on the basis of the appraisals and the 40 men not selected. Cross-validation was accomplished with the same rating forms the following year. Significant validity coefficients ranging from .38 to .46 were found to hold up after cross-validation for two aptitude tests (verbal and reasoning) and two subscales of a temperament survey.

Divisions 14 and 17. Symposium: The New USES Occupational Classification Structure

12:00-1:50. Pan American Room, Mayflower CARROLL L. SHARTLE, Chairman

Participants: CARL A. HEINZ AND SIDNEY A. FINE,

Discussants: Albert S. Thompson, Anne Roe, and Louis B. Gaiennie.

APA Board of Professional Affairs and Conference of State Psychological Associations. Workshop on Professional Problems: Public Information

1:00-3:50. Ohio Room, Statler

C. RAY CARPENTER, Chairman

Participants: MICHAEL AMRINE, IRWIN A. BERG, ERASMUS L. HOCH, AND EDWARD J. SHOBEN, JR.

Division 2. Symposium: The Psychologist as Teacher: A Report of Research

1:00-1:50. Jefferson Room, Mayflower

JOHN W. GUSTAD, Chairman

Participants: John W. Gustad, Bernard G. Berenson, and Philip Welsh.

Discussant: Kenneth E. Clark.

Division 3. Animal Behavior II

1:00-1:50. California Room, Statler

ALAN E. FISHER, Chairman

1:00. Maturation and pattern discrimination. Rob-ERT R. ZIMMERMANN, University of Wisconsin. (Sponsor, Harry F. Harlow)

Three groups of infant monkeys each began a triangle vs. circle discrimination at 11, 29, and 61 days of age, respectively, and the first two groups were subsequently tested for primary stimulus generalization. These experiments show that the neonatal monkey solves its first discrimination problem both rapidly and efficiently without the benefit of any specific previous learning experience and that, contrary to previous speculation, the baby monkey trained on a simple form discrimination demonstrates very efficient primary stimulus generalization.

1:10. Differential human handling as reinforcing events and as treatments influencing later social behavior in puppies. Walter C. Stanley, Roscoe B. Jackson Memorial Laboratory, Maine.

One theoretical interpretation suggested that human handling would make puppies more attracted to people than a relative lack of human handling. An alternative interpretation suggested that this prediction would hold only if being handled by a person was stronger as a reinforcer in the original training than coming into contact with a passive person. The findings were contrary to the first interpretation. Coming into contact with a passive person was more reinforcing than being handled by a person. Later, a different test of "attraction to a person" gave results consistent with those found in the original training.

1:20. The monkey as host and guest: Laboratory territoriality. R. W. LEARY, University of Oregon.

All possible pairings of eight monkeys were subjected to food-dominance tests in a Wisconsin General Test Apparatus (WGTA) under three conditions: I. Monkeys living alone; II. Monkeys living for 48 hrs. in home-cage of one monkey, then of

other monkey; III. Monkeys living alone. In Condition II little change in dominance (from Condition I) occurred when the "host" had been dominant in Condition I, but a significant number of reversals in dominance occurred when the "host" had been submissive. This result held for home-cage as well as WGTA tests. In Condition III only three pairs exhibited such reversals.

1:30. Social facilitation in monkeys. John S. Stamm, Institute of Living, Hartford.

Eight pairs of immature monkeys were trained to press a disk against a 4 lb. tension for food reward. Sessions (30 min.) during which an S was alone in the apparatus were alternated with sessions during which two cage mates were tested in adjacent positions. The dominance-submission status was determined in the home cages. The submissive group of Ss obtained medians of 58 pellets under solitary and 82 pellets under social conditions—corresponding scores for the dominant group were 34 and 78. The differences in pressing rates between submissive and dominant groups were less under the social than under the solitary condition, regardless of total amount of reward received.

Division 3. Perception I

1:00-1:50. Pan American Room, Statler ISRAEL GOLDIAMOND, Chairman

1:00. The effects of training on discrimination of figural complexity. Lois Lawrence Elliott, Lackland Air Force Base, Texas.

This experiment investigated effects of training on discrimination of figural complexity. Three experimental groups of high school students received 210, 420, and 630 training trials in discriminating complexity of pairs of randomly generated shapes prior to testing with new shapes belonging to the same stimulus population. Neither within-group and between-group analyses nor comparison with the comrol group indicated improvement in discrimination although Ss were responding well below optimal performance. Results suggest that the psychophysical continuum of figural complexity is so well established prior to mid-adolescence that 630 training trials do not improve performance.

1:10. The relation between judged similarity and the physical properties of plane polygons. Davis J. Chambles and Fred Attneave III, Massachusetts Institute of Technology and University of California.

This study relates judgments of similarity to the physical dimensions of a large group of five- and ten-sided plane nonsense polygons, under three methods of presentation. A variety of measures were taken on the figures and intercorrelations were derived between the eight series of scale judgments and the physical measures. A factor analysis of the resultant matrices gave one significant factor only, from which it was argued that a single underlying psychological dimension was tapped. Measures on the sides and area were of little consequence, but those based on angles accounted for most of the variance of judgments.

 Recognition of distorted melodies. Benjamin W. White, Massachusetts Institute of Technology.

The degree to which various transformations affected the recognizability of familiar melodies was determined. Linear transformations which involved multiplying the log frequencies by a positive integer, subtracting or adding an integer were least disruptive in terms of the percentage of correct identifications. Nonlinear transformations were more difficult, and temporal reversal still more difficult, equalled only by a transformation which eliminated melodic information entirely and left only the rhythmic pattern intact. Melodies were as easily identified from the first six notes as from the first 24, either forward or backward.

1:30. Perception of the statistical structure of grouped events. MAURICE SEAQUIST, University of Texas.

Two groups were presented samples successively from a population of black and white marbles. Estimates of the true proportion of black marbles in the population were made and confidence intervals assigned. One group estimated from samples with high variance, the other from low variance samples. A second sequence of samples from a different population was next presented to see if subjects could perceive the population change. Subjects making estimates from high variance samples were significantly less accurate, less confident, and less able to recognize population change. The implications of the variance of events for statistical decision theory are discussed.

Division 5. Measurement of Personality Characteristics I

1:00-1:50. North Room, Mayflower VICTOR H. NOLL, Chairman

1:00. Two measures of tension and anxiety. Dell Lebo and William Applegate, Richmond Professional Institute.

Manifest Anxiety Scale (MAS) scores and Discomfort Relief Quotient (DRQ) values seem to be related. While a review of the literature did not reveal any direct comparisons, it justified the following hypothesis: the MAS should be more closely correlated with DRQs obtained under neutral conditions than with those secured in more emotional situations. MAS scores and low, high (emotional), and intermediate (neutral) DRQs, secured by the method of instructional set, were obtained from 89 subjects within a 50-minute period. No significant correlations were found between any combination of DRQs and MAS scores. Implications of the findings are presented.

1:10. Psychological judgment of the Bender Gestalt Test compared with three physiological vectors and psychiatric judgment. S. R. Graham, A. A. VITANZA, AND M. L. RAWN, Long Island Consultation Center and Creedmore Institute for Psychobiologic Studies.

The Bender Gestalt of 51 male schizophrenics collected concomitantly with psychogalvanic response, pulse rate, and respiratory rate were submitted to blind analysis by three tests. The consensus of psychological judgment, based on current clinical usage of projective concepts, was significant at the .01 level in 9 out of 12 comparisons. In 12 out of 12 comparisons, the direction of physiological determination agreed with psychiatric evaluation. These agreements in all 12 instances were statistically significant at the .01 level.

1:20. Psychomotor efficiency in a conflict situation related to anxiety and impulsiveness. ERNEST S. BARRATT, Texas Christian University.

The purpose of this study was to relate anxiety and impulsiveness to psychomotor efficiency in a conflict situation. Four groups of Ss selected on the basis of their scores on the Taylor Manifest Anxiety Scale, the Otis Mental Ability Scale, and the Barratt Impulsiveness Scale (BIS) were run through a mirror tracing task. The BIS is an experimental scale constructed to measure the tendency "to make decisions quickly and without much thought." The results suggest that: impulsiveness interferes more permanently with efficiency in this task than anxiety; anxiety tends to inhibit impulsiveness in some instances. The paper will also include a discussion of an item analysis of the BIS and suggestions for further research in this area.

1:30. Rorschach responses as a function of exposure time. MILLICENT TYCKO, New York University. Changes in Rorschach responses as a function of exposure time were studied using .03", .30", 3.0", and full exposure with 40 subjects. Movement was facilitated at longer exposures, with poorer control in M at longer exposures. Improved control with increased exposure was reflected in diminished FC minus, diminished crude color, increased Populars, and higher pure form level. More differentiation and organization in perception occurred at longer exposures. M%, H plus (H)%, and At% on the control Behn-Rorschach were significantly correlated with use of these variables at each brief exposure of the Rorschach. Examination of projective processes was facilitated by this technique.

Divisions 9 and 15. Symposium: The Social Psychology of Higher Education

1:00-2:50. South American Room, Statler HENRY CHAUNCEY, Chairman

Participants:

PAUL A. HEIST. The diversified student population of American higher education.

DONALD L. THISTLETHWAITE. Social factors and the development of intellectual talent.

CHARLES C. McARTHUR. Private school values and subsequent college performance.

RALPH M. RUST (with JAMES DAVIE), Some correlates of self-propelled intellectual activity in college.

DONALD R. Brown. Nonacademic predictors of academic success.

NATALIE ROGOFF, Institutional features of American education.

Discussant: Joshua A. Fishman.

Division 12. Symposium: Roads to the Unconscious

1:00-2:50. Ballroom, Statler

FRANK AULD, JR., Chairman

Participants

JACOB LEVINE. Humor as an expression of the unconscious.

ROBERT H. KNAPP. Esthetic preference and personality dynamics.

SIMON O. LESSER. Fiction and the unconscious.
LESTER LUBORSKY. The study of personality dynamics through dreams.

Films. Mental Health

1:00-4:50. Massachusetts Room, Statler (For titles, see Films on Friday.)

Division 2. Symposium: The Image of Science in America

2:00-2:50. Cabinet Room, Mayflower ROBERT C. DAVIS, Chairman

Participants:

ROBERT C. DAVIS. The public's image of science and scientists.

RENÉE U. MARKS. Science and medicine from the layman's viewpoint.

MILTON MAIER. The attitudes of youth toward science.

Division 3. Verbal Learning I

2:00-2:50. California Room, Statler
LLOYD R. PETERSON, Chairman

2:00. Acquired equivalence training and negative transfer. John R. Braun, Carleton College.

From Miller and Dollard's acquired equivalence of cues hypothesis, it follows that learning the same verbal label for a number of similar stimuli should produce a negative transfer effect when Ss later must respond differentially to them. A Distinctiveness-Group learned different labels for a number of dot patterns, while an Equivalence-Group learned the same label for each. On later criterion task performance, the Distinctiveness-Group showed a positive transfer effect, but the Equivalence-Group did not show a negative transfer effect. The adequacy of the Miller and Dollard model in accounting for the effects of labeling is questioned.

2:10. Effects of frequent omission of the response word and familiarity of the response word in learning paired associates. HARDY C. WILCOXON, University of Arkansas.

Lists of nonsense syllables and meaningful adjectives paired in the order, NS = MA, and MA = NS, were learned to a criterion of one perfect repetition by independent groups. For different groups, the response member of a given pair was omitted at random on 75%, 50%, or 0% of the trials. Omission of the response word 75% of the time retarded learning considerably, whereas 50% omission caused only slight retardation. Lists having nonsense syllables in the response position were significantly harder to learn, but, contrary to expectation, interaction between S-R order and percentage of omission was not significant. The implications are discussed.

2:20. Association value and association strength.

LUCIANO L'ABATE, Michael Reese Hospital,
Chicago, Illinois.

Lists of scaled paired associate nonsense syllables are still unavailable in the literature. Pairing nonsense syllables of known association values as stimulus and response terms produces a new bond between them. This degree of bond derived on the basis of correct responses within a learning criterion is called association strength, which appears related to the association values of stimulus and response terms according to a direct, but nonadditive and nonlinear, relationship. This report presents data to support this conclusion and lists of scaled nonsense paired associates to aid in a more adequate study of verbal behavior.

2:30. The role of association value and experimentally produced familiarity in paired associate verbal learning. ROBERT L. WEISS, University of Buffalo.

Research in paired associate verbal learning suggested the functional equivalence of meaningfulness and familiarity as parameters of S-R differentiation. An experimental attempt was made to demonstrate this functional equivalence by use of H and L association value nonsense syllable paired associates. Syllables were also familiarized by creating reliable identifying responses and integration of instrumental responses. Noble's ease of learning hierarchy, found for m-value words, was also obtained with nonsense syllables, viz., H-H, L-H, H-L and L-L. Meaningfulness (H association value) and familiarity facilitate learning equally; meaningfulness therefore may be no more than familiarity.

Division 3. Vision

2:00-2:50. Pan American Room, Statler JOHN C. ARMINGTON, Chairman

2:00. Responses of single macaque lateral geniculate cells to monochromatic light. R. L. DE VALOIS, C. J. SMITH, AND S. T. KITAI, University of Michigan.

Previously reported results on color "modulators" among the pure on-cells in the dorsal layers and on intermediate layer cells which fire on to one wave length and off to the complementary wave length were confirmed and extended. Many inhibitory ventral layer cells were recorded from. Most have broad spectral sensitivities ("dominators"). Some have narrow spectral sensitivity and long lasting (several seconds) alteration of inhibition and excitation after the termination of stimulation, with different time courses of inhibition and excitation to a color and to its complement. Relation of these latter cell responses to afterimages is discussed.

2:10. Microelectrode recordings from cells in visual cortex of macaques. C. J. SMITH, R. L. DE VALOIS, AND S. T. KITAI, University of Michigan.

Laterality, pattern of response, and color selectivity were analyzed. Many cells do not respond to any parameters of light stimulation employed in this study. Contrasting with geniculate cells, some units respond to both ipsilateral and contralateral stimulation. In these cases, the pattern of response may be the same or may differ in its characteristics according to which eye is stimulated, being inhibited in one case and exhibiting increased firing in the other. Of cells having relatively narrow bands of spectral sensitivity, the response to color may be identical for stimulation of the right and left eyes.

2:20. Changes in chemical and physical behavior of mammalian vitreous humor follow light and dark adaptation. P. S. SHURRAGER, Illinois Institute of Technology.

Research reported here shows that physical and chemical changes in the vitreous humor substrate of mammalian eyes result from various stresses on the in vivo eye. The correlation is high between the degree of in vivo light or dark adaptation and certain biochemical changes and rates of change in hydrolysis, as well as in gross protein fragmentation and in vitro physical states of vitreous humor. Most of these vitreous humor effects show themselves to be reversible reactions as functions of in vivo dark or light adaptation times. Curves obtained by plotting changes in chemical and physical properties of sheep vitreous against time of dark adaptation are similar to curves obtained by continuously recording quantal threshold visibility of monochromatic light during dark adaptation of human subjects. No causal relationship between vitreous behavior and the psychological phenomena of light and dark adaptation is postulated.

2:30. Quantal scotopic measurements of visibility thresholds with monochromatic light. G. R. Hurt and P. S. Shurrager, Illinois Institute of Technology.

Quantal sensitivity to 50 Å band-width monochromatic light was continuously recorded throughout the dark-adaptation process. Dark adaptation curves to 51 different bands were obtained. Stimulus band-widths for successive curves were randomized (i.e., did not progress in order across the visible spectrum). Dark adaptation curves for wave lengths below 560 millimicrons were found to have much in common and to differ significantly as a group from dark adaptation curves for wave lengths above 560

millimicrons. For all wave lengths below 560 millimicrons the rates of change in the early minutes of dark adaptations are similar. True psychophysical quantal scotopic threshold curves differ in shape from the typical nonquantal (relative OD) curves reported in the literature. As the cornea quantal sensitivity varied from 90 to 240 quanta/mm²/.25 sec./sec. for 500 mu to 40×10^4 quanta/mm² for 655 mu. Weber's ratio at scotopic thresholds varied from .15 to .55 for different light-dark ratios, wave lengths, and subjects.

Division 3. Conference on the Experimental Analysis of Behavior

2:00-3:50. Congressional Room, Statler
WILLIAM H. Morse, John Boren, and Thom
Verhave, Chairmen

Division 5. Cognitive Abilities and Scholastic Achievement

2:00-2:50. North Room, Mayflower

JEROME E. DOPPELT, Chairman

2:00. The factorial structure of the WISC at ages 7½, 10½, and 13½. Jacob Cohen, New York University.

The factorial structures of the 12 WISC subtests for the standardization samples at ages 7½, 10½, and 13½ were determined. The same five correlated primary factors were identified in all three groups: Verbal Comprehension I, Perceptual Organization, Freedom from Distractibility, Verbal Comprehension II, and an uninterpreted (but consistent) factor. These factors are also very similar to those found on other Wechsler scales for normal adults of varying ages and adult male neuropsychiatric patients. It was also found that the amount of general factor variance did not decline in the course of development. An essential continuity of intellectual structure with maturation is suggested.

2:10. Innate abilities: One or many? STEVEN G. VANDENBERG, University of Michigan.

Covariances of within-pair differences on the 6 parts of Thurstone's Primary Mental Abilities Test were calculated separately for 45 identical and 37 fraternal twin pairs. Let these 6 by 6 matrices be called $C_{\rm MZ}$ and $C_{\rm DZ}$. It will be suggested that the equation $|C_{\rm MZ}-\lambda I|=0$ contains information about the dimensionality of the environmental influences and that the equation $|C_{\rm DZ}-\lambda C_{\rm MZ}|=0$ contains information about the dimensionality of the hereditary components. The proper values and vectors of these equations will be presented and various interpreta-

tions examined for the light they throw on the question: one or many innate abilities?

2:20. Factors in problem solving. P. R. Merrifield AND J. P. Guilford, University of Southern California.

It is hypothesized that problem solving involves the ability to produce alternative outcomes from given information and also the ability to produce alternative antecedents to a desired goal situation. Tests derived from these hypotheses, plus tests of previously established factors and tests posing complete problems for solution, were administered to 200 Naval Air Cadets and Aviation Officer Candidates. The intercorrelations are being factor analyzed as a test of the hypotheses. The results of the factor analysis and a multiple regression analysis using the complete problems as criteria will be presented.

2:30. The relationship of a student's home and school experiences to his score on experimental "Tests of Developed Ability." JOHN W. FRENCH, Educational Testing Service, Princeton, New Jersey.

Over 2,000 high school seniors took the College Board's experimental Tests of Developed Ability, which attempt to measure ability to think in the fields of science, social studies, and humanities. The students supplied information about their experiences. Relationships were studied by drawing score profiles for groups having different experiences and by computing multiple correlations to show how well a student's experiences can be used to predict his test scores. Correlations computed for half of the data were cross-validated on the other half. The science tests related to science experiences; the social studies and humanities tests both related to humanities experiences.

2:40. Criteria of human judgment ability: I. The "clinical" assessment of intelligence and personality. Paul J. Hoffman, University of Oregon.

Multiple regression techniques are shown to have application to the problem of describing the judgmental or diagnostic process. Using modifications of these techniques, models are developed for single "judges" which can be considered to be representative of the manner in which the data or information underlying the judgment are subjectively utilized and combined. This approach enables differentiation among judges along dimensions not previously investigated in the literature and provides feedback information that has training implications. Individ-

ual models may be contrasted with respect to simplicity, agreement with subjective estimates of the judgment process, configurational as opposed to additive (nomothetic) utilization of information, and other factors.

Division 14. Symposium: Industrial Psychologists Grandfathers' Symposium

2:00-3:50. Chinese Room, Mayflower EDWIN R. HENRY, Chairman

Participants:

Morris S. Viteles. Fundamentalism in industrial psychological practice.

HERBERT A. Toops, A research utopia in industrial psychology.

Division 14. Symposium: The Laboratory Approach to Management Development

2:00-3:50. Federal Room, Statler

LELAND P. BRADFORD, Chairman

Participants: Jack R. Gibb and Gordon L. Lippitt.

Division 17. Symposium: How Much Information on Test Results Should be Given to Students?

2:00-3:50. Pan American Room, Mayflower Howard B. Lyman, Chairman

Participants:

JOHN D. BLACK. Views of a counseling psychologist.

Paul A. Horst. Views of a research psychologist. Stella Whiteside. Views of a school psychologist.

HENRY S. DYER. Views of a test publisher.

Discussant: DOROTHY C. ADKINS.

APA Board of Professional Affairs and Conference of State Psychological Associations. Meeting of Officers of State Associations: The Role of the Board of Professional Affairs in State Association Affairs

3:00-4:50. Michigan Room, Statler

FILLMORE H. SANFORD, Chairman

Participants: John G. Darley, John W. Gustad, and Jane D. Hildreth.

Division 3. Motivation I

3:00-3:50. California Room, Statler

Donald J. Lewis, Chairman

3:00. Effects of repeated food deprivation on activity and survival during terminal food deprivation. B. A. CAMPBELL AND R. TEGHTSOONIAN, Princeton University.

Two groups of rats were housed in stabilimeter activity cages. One group received six 24-hour food deprivations separated by 3 days of ad libitum feeding. The other group had ad libitum access to food and water. Both groups were then subjected to terminal food deprivation. Animals with previous deprivation experience showed a marked decrease in activity during deprivation and survived an average of 15 days. Control animals, after an initial decrement, increased their activity to a peak 50% greater than their predeprivation level and survived an average of only 11 days. Mechanisms which may mediate these phenomena are discussed.

3:10. The effect of number and strength of electric shocks on running speed in a conflict situation. EILEEN KARSH KAGAN, Yale University. (Sponsor, Neal E. Miller)

This study was designed to determine the effects of punishment as a function of the number of shocked trials and the intensity of shock. Male rates were trained, under hunger drive, to run down an eightfoot straight alley to secure food. The animals were then given food and a constant intensity shock at the goal. Running speed declined progressively over trials at a rate directly related to the strength of shock administered. The data also showed a characteristic gradient of running speed over sections of the alley. Shock depressed the entire gradient but had the greatest effect near the goal.

3:20. Deprivation and time of testing as determinants of food intake. George Cicala and John K. Bare, College of William and Mary. Single deprivations, varying in duration to 24 hours, produce complex effects on the food intake of white rats. During the first hour of eating, intake increases with length of deprivation. Thereafter, both time of testing and deprivation alter ingestion. Deprivations as long as 8 hours produce deficits which the animals fail to repair completely in the subsequent 24 hours. Further, the data suggest that recovery of food loss is most successful at a time when the normal rate of intake is low.

3:30. Some effects of an "anxiety-eliciting" CS on human reaction latency. Ann Marie Goerk and Leon J. Kamin, McMaster University.

Ninety male undergraduates were required to press a reaction key as quickly as possible in response to a buzzer CS. Control Ss show that, if the CS has not been paired with shock, response termination of the CS has no effect on latency. Four experimental groups, after initial CS-US pairings, were assigned to a design which crosscut prompt and delayed response-termination of the CS with avoidance and nonavoidance of the US. CS-termination facilitated latency, US-avoidance did not. Control Ss responded more rapidly than experimental Ss, suggesting that the CS acquires, in addition to secondary reward value, a disruptive influence on performance.

Division 3. Perception II

3:00-3:50. Pan American Room, Statler Davis J. Chambliss, Chairman

3:00. Vexirversuche: The log relationship between word frequency and recognition thresholds, other effects, obtained without the presentation of a stimulus. ISRAEL GOLDIAMOND, Southern Illinois University.

Increasing the frequency of a word and reducing recognition alternatives lower recognition thresholds. Is perception facilitated? Ss were told to guess at subliminal stimuli; no words were shown, only blanks. Scores were S's agreements with words on E's score sheet, the operation defining accuracy when words are shown. Words made more frequent (training session) were more frequently "recognized," had lower "recognition" thresholds, as did higher frequency letters of the alphabet, or with alternatives reduced. Rather than perceptual facilitation (or perceptual differences), such training (or differing frequencies) may involve facilitation of those responses which increase agreements with score sheets.

3:10. The effects of sensory deprivation and sensory bombardment on apparent movement thresholds. Donald W. Ormaston, Purdue University.

A need for change, or stimulation, within an optimum range was postulated. It was also postulated that extremes of stimulation, outside the optimum range, produce compensatory reactions. The hypotheses were: (a) sensory deprivation would lead to increased readiness to perceive stimulation, and (b) sensory bombardment would result in decreased readiness to perceive stimulation. Apparent movement thresholds were determined before and after periods of sensory deprivation, sensory bombardment, and waiting in a reception room. Readiness for stimulation increased under sensory deprivation and waiting, but decreased under sensory bombardment. All differences between groups were significant except for those between the sensory bombardment and waiting room groups.

3:20. Effects of experimentally induced stress on certain measures of perceptual organization. AMMON C. ROTH, JR., Upsala College.

College students were tested on several measures of visual perception consisting of modifications of two Ames demonstrations and a fusion-discrimination task. After exposure to psychological stress involving failure and frustration they were retested. Significant sex differences were obtained on the fusion-discrimination task. On a size-distance table, stress produced significant changes for a familiar stimulus but not for an unfamiliar stimulus. Correlations between the perceptual measures indicated a differential complexity in the types of visual perception studied. These differences were discussed in relation to the varying effectiveness of the induced stresses employed. One hundred sixty subjects were used.

3:30. The efficiency of utilization of visual information and the effects of stress. Austin Jones, University of Pittsburgh.

The hypothesis was tested that psychological stress reduces the efficiency of information processing in visual perception. Toward this end, a new information scaling procedure was devised, which yields the magnitude of visual information necessary to produces a threshold recognition of form in the S. Ss were given occasional shocks of varying degrees of severity as they performed the information task. The mean amount of visual information necessary to produce threshold form recognition was found to increase with the degree of stress administered.

Division 12. Symposium: Methodology and Evaluation in Group Psychotherapy

3:00-4:50. Ballroom, Statler

CARL N. ZIMET, Chairman

Participants:

Abraham Luchins. Evaluation of group therapy and some methodological problems and suggested solutions.

MORRIS B. PARLOFF. Patient-therapist relationships and therapeutic outcome.

GEORGE A. TALLAND. Interaction and structure in psychotherapy groups.

CARL N. ZIMET AND HAROLD J. FINE. Evaluation of group psychotherapy: A dual approach.

Division 5. Measurement of Personality Characteristics II

4:00-4:50. Cabinet Room, Mayflower

A. Pemberton Johnson, Chairman

4:00. Predictors and clinical criteria of performance in a revised medical curriculum. Joseph L. Brozgal, Western Reserve University School of Medicine.

Graphic rating scales were developed to gather criterion data on the clinical performance of medical students in a revised curriculum. Interrater agreement among instructors on these scales fluctuated widely, depending upon type of instructor, rating conditions, and clinical situation. Average instructor ratings demonstrated considerable predictive value. Intercorrelation of predictor variables (academic examinations, peer evaluations, and preceptor evaluations) with the criterion variables yielded consistently significant and positive relationships between peer and preceptoral ratings and the criteria. The results demonstrate the potential value of peer's and superior's judgments of performance and the need for a multi-faceted evaluation program.

4:10. Personal vs. impersonal criteria in the developing professional image of medical students.

JOSEPH L. BROZGAL AND WALLACE J. KNETZ,

Western Reserve University School of Medicine.

A sociometric peer nominating technique was used to examine the structure of the professional image of one class of medical students and the changes therein between freshman and senior years. Sociometric items ranged in implied personal interaction from none to considerable. Professional image structure was inferred from intercorrelation matrices; item clusters included Technical Competence and Human Relations criteria. Number of peer nominations was relatively stable over three years, especially for Technical Competence items. Comparison of peer nominations with instructors' ratings of clinical performance revealed that students and faculty tended to share similar values regarding professional image, more so in the fourth year.

4:20. Interrater agreement in profiles derived from a modified forced-choice rating form and in profiles derived from a descriptive check-list form. Don J. Cosgrove, Procter & Gamble Company.

The purpose was to determine whether students using a modified forced-choice form agreed more or less among themselves in rating of teachers than did students using a descriptive check-list form. Both rating forms produced scores for each of four areas of teacher activity. Area scores were presented in profile form, and interstudent profile agreement for each of the two rating forms was assessed by using Cattell's shape correlation coefficient, r_{\bullet} . Students

using the modified forced-choice form tended to agree more among themselves in profiles resulting from their ratings than did students using the check list.

4:30. "Reliability" and sociometric tests. RICHARD R. CLAMPITT, Columbus Psychiatric Institute and Hospital.

Earlier writers have raised questions regarding the applicability of test reliability concepts and techniques to sociometric data. The unique characteristics of sociometric tests present problems in addition to those usually encountered in psychological measurement and may lead to confusion when conventional techniques are applied. An attempt is made to re-evaluate the problem, to suggest possible application of techniques, and to clarify the meaning of the coefficients so obtained. Utilizing Cronbach's definitions as a frame of reference, it is concluded that test reliability concepts and techniques can be meaningfully applied to sociometry.

Division 9. Symposium: The Academic Mind: An Empirical Study of Social Scientists in a Time of Crisis

4:00-5:50. Federal Room, Statler

PETER BACHRACH, Chairman

Participants: Louis M. Hacker, Louis Joughin, Paul Lazarsfeld, Robert Louis Kahn, and Ernest Van den Haag.

Division 10. Symposium: The Study of Art as the Study of Man

4:00-5:50. Pan American Room, Statler LEONARD CARMICHAEL, Chairman

Participants: Directors or curators of the following art galleries of Washington: Corcoran Gallery of Art, Freer Gallery of Art, National Collection of Fine Arts, National Gallery of Art, Phillips Gallery, and Textile Museum.

Division 19. Symposium: Problems of Methodology in Research on Complex Operational Systems

4:00-4:50. California Room, Statler M. DEAN HAVRON, Chairman

Participants:

M. Dean Havron. The potential of the psychologist in research on complex man-machine systems.

GEORC 2 GREER AND JOHN A. WHITTENBURG. Research strategy choices in investigating air surveillance systems. Donald W. Meals. Problems of design and method in research on large ground force combat units.

WILLARD S. VAUGHAN, JR. AND JOSEPH E. Mc-Grath. System research methodologies as developed and applied by personnel of different scientific disciplines.

MONDAY EVENING, SEPTEMBER 1

APA Board of Professional Affairs and Conference of State Psychological Associations. Workshop on Professional Problems: Living with Legislation

8:00-9:50. Michigan Room, Statler

CLAUDE E. BUXTON AND HARRY V. McNeill, Chairmen

Divisions 9 and 14. Invited Address

8:00-8:50. Ballroom, Statler

GEORGE KATONA. The Psychology of the Recession.

Division 9. The Lewin Memorial Award Presentation and Address

9:00-9:50. Ballroom, Statler

ROBERT B. MACLEOD, Chairman

DORWIN CARTWRIGHT. Some Things Learned.

TUESDAY MORNING, SEPTEMBER 2

Divisions 1 and 12. Symposium: Mediating Processes in Transfer

9:00-10:50. South American Room, Statler

B. RICHARD BUGELSKI, Chairman

Participants:

ALBERT E. Goss. Transfer and concept formation.
Bennet B. Murdock, Jr. Stimulus predifferentia-

CHARLES C. PERKINS. Stimulus generalization. Delos D. Wickens. Response generalization.

Divisions 2, 12, 14, and 17. Symposium: Contributions to the Teaching of Psychology from Several Applied Fields

9:00-10:50. Chinese Room, Mayflower

CLARE W. THOMPSON, Chairman

Participants: Edward S. Bordin, Raymond A. Katzell, Edward J. Shoben, Jr., and Clare W. Thompson.

Division 3. Audition

9:00-9:50. Ohio Room, Statler

A. W. MILLS, Chairman

 Stimulus spacing and the judgment of loudness. Joseph C. Stevens, Harvard University.

The scaling of loudness by magnitude estimation under a number of stimulus spacings confirms the finding that the loudness of white noise is essentially a power function of stimulus intensity above about 40 db. SPL. The overall form and slope of the function turn out to be relatively insensitive to the spacing of the stimuli. Small local distortions can be brought about, however, by bunching the stimuli into narrow regions of the total range. In contrast to the stability of magnitude estimates, category judgments of loudness vary substantially with the spacing of the stimuli.

9:10. Temporary threshold shift (TTS) in audition. W. DIXON WARD AND ARAM GLORIG, Subcommittee on Noise in Industry, Los Angeles, California.

Experiments on auditory TTS resulting from continuous and intermittent broad- and narrow-band noises of from 80 to 105 db. SPL are summarized. The main findings are: (a) both growth and recovery of TTS in decibels are linear when plotted against the logarithm of time; (b) the growth slope (db per log time) is proportional to (i) the amount by which the intensity level exceeds some base value and (ii) the fraction of time the noise is on. The close similarity between these results and those from studies on adaptation in other sense modalities is discussed, and the possible application of Crozier's statistical hypothesis to all sensory adaptation is considered.

9:20. Auditory acuity of the marmoset monkey. HERBERT R. SEIDEN, System Development Corboration.

Using shock avoidance in conjunction with the "up and down" method of limits, the auditory acuity of five marmoset monkeys was determined. This study provides information concerning the range and sensitivity for phylogenetically inferior subhuman primates. Data were compared with that existing for phylogenetically superior subhuman primates as well as human hearing. The results suggest a general sensitivity curve for the subhuman primate despite a diversity of animals, experimenters, and techniques. This function, which differs somewhat from human sensitivity, provides some basis for speculation about audition. Methodological

techniques for studying marmosets are also suggested.

 9:30. Auditory perception of temporal order. IRA J. HIRSH, Central Institute for the Deaf, St. Louis, Missouri.

What is the minimum time required for listeners to report correctly the order in which two successive sounds occur? The time interval separating the onsets of each of a pair of sounds was varied and listeners were asked which sound came first. Results from a group of five listeners show that a time interval of about 17 milliseconds yields 75% correct judgments, on a linear function that relates normalized percentage correct response to the time interval. This function is invariant with various sound pairs: two tones, click and tone, click and noise, and tone and noise.

Division 3. Decision Theory

9:00-9:50. California Room, Statler WARD EDWARDS, Chairman

9:00. The effect of "social" discriminative cues on probability learning. EDITH D. NEIMARK AND SEYMOUR ROSENBERG, Wright Air Development Center, Ohio and Lackland AF Base, Texas.

The effect upon probability learning of introducing a probabilistic cue and labeling the cue "partner" was studied. All Ss received 200 trials in a modified probability learning situation. A factorial design comprising 3 values of event probability (E_1) and 5 values of cue validity was used. Two-thirds of the Ss (Social Group) were told the cue represented choice of a partner; the rest (Nonsocial Group) were not. Response measures and results were: proportion of E_1 predictions was a linear function of E_1 frequency; proportion of agreement with cue was a linear function of cue validity. For both measures Social groups learned significantly slower than Nonsocial groups.

9:10. An analysis of a two-person interaction situation in terms of a Markov process. RICHARD C. ATKINSON AND PATRICK SUPPES, University of California, Los Angeles and Stanford University.

The study deals with an analysis of a non-zerosum, two-person game situation in terms of a Markov model for learning. Ss were run in pairs for 210 trials. On a trial each player made one of two responses. For player A the responses are designated A_1 and A_2 , for player B they are B_1 and B_2 . If A selected A_1 and B selected B_1 , then there was a probability x_1 that A was correct and a probability y_1 that B was correct. The outcome of the other three response pairs, A_1B_2 , A_2B_1 , and A_2B_2 were identically specified by (x_2, y_2) , (x_3, y_3) , and (x_4, y_4) . Two groups were run using different sets of (x_1, y_1) values. Observed results and predictions from the Markov model were in close agreement.

9:20. Preliminary test of a mathematical model conceptualizing the persuasion process taking place in debates between two initially disagreeing subjects. V. B. Cervin, Imperial Oil Limited, Toronto, Ontario.

Persuasion is defined in terms of reinforcement and extinction of opinion pro or con a topic. The mathematical model, which is based on learning theory, attempts to describe the process of persuasion between two disagreeing subjects as a function of time. Initial opinions and certain (general) personality traits of the participants are represented in the model by constants. In particular, the process and outcome of persuasion can be predicted from knowledge of the subjects' differential emotional responsiveness. The four possible types of persuasion process predicted by the model have been obtained experimentally.

9:30. The effects of psychological distance on cost and value as determiners of decision. W. A. S. SMITH, University of Nevada.

The present experiment attempts to manipulate psychological distance, a variable which an earlier experiment suggests is related to the effectiveness of cost and value in determining decision. The earlier study inadvertently emphasized cost over value and thus caused value to be at a greater psychological distance from the subject. In the current procedure, cost and value are given equal emphasis in Group One, while value remains at a greater psychological distance in Group Two. The prediction that the value will be a more effective determiner of decision in Group One than in Group Two is confirmed by the results.

Division 5. Validity Studies

9:00-9:50. Cabinet Room, Mayflower CLAUDE F. BRIDGES, Chairman

9:00. The Edwards Personal Preference Schedule and academic achievement. SHIRLEY L. KLETT, University of Washington.

Relationships between the Edwards Personal Preference Schedule and various aspects of academic achievement were explored in a high school sample of four hundred graduating seniors. With IQ scores taken into account, the EPPS score on Dominance was significantly related to academic achievement on all analyses. In analyses of variance of over- and under-achievers, it was found that high EPPS scores on Dominance, Achievement, and Endurance, and low EPPS scores on Autonomy, Heterosexuality, and Aggression were characteristic of over-achieving students, the reverse pattern being more characteristic of under-achievers.

9:10. Validity of "clinical" predictions made by entering university freshmen. Benno G. Fricke, University of Michigan.

Predictions by freshmen were collected at the beginning of a regular orientation testing session and before the students were seen by university counselors. The freshmen were asked to predict: the percentage of the freshman group they expected to surpass on the scholastic aptitude test they were about to take, and the percentage of the group they expected to surpass in first semester grade-point average. In addition each freshman was asked to estimate (or report) the percentage of his high school graduating class he surpassed. The predicted, estimated, and actual percentages were intercorrelated and analyzed along with several "discrepancy" scores.

9:20. AVA as a predictor of occupational hierarchy. Peter F. Merenda and Walter V. Clarke, Walter V. Clarke Associates.

Predictions were made as to class membership (higher-lower occupational level) from AVA profiles of 60 Ss in a business (mixed sex) cross-validation sample. Bases for prediction were distribu-Centour scores derived from the discriminant analysis applied to the problem of distinguishing between these two classes in a business validation sample (N = 178) and an industrial validation sample (N = 159). A total of 44 out of 60 correct classifications were made for the business cross-validation sample and 62 out of 76 correct classifications for the industrial sample. These findings are interpreted as evidence of the utility of AVA in measuring temperament differences existing between members of higher and lower occupational echelons.

9:30. Parental vs. psychometric estimations of children's mental abilities. NATHAN FARBER AND ANNE B. WARREN, Buffalo, New York and Los Alamos, New Mexico.

Parents of cerebral palsy and normal children were asked to estimate their child's mental ability. Statistical comparisons of parents' estimations were made with actual mental ages obtained on Cattell Infant Intelligence and Stanford-Binet tests. No statistical difference was found between parents' estimations and actual test scores in either group. Parents of cerebral palsy children estimated their children's mental abilities as well as parents of normal children.

9:40. Relation of scores on Davis-Eells Test of General Intelligence to social status, school achievement, and other intelligence test results. VICTOR H. NOLL, Michigan State University.

This study investigated the extent to which results of the Davis-Eells Test of General Intelligence are independent of cultural differences and the extent of their agreement with other intelligence and achievement measures. Results of the Davis-Eells test administered to pupils in Grades 2 through 5 in a midwestern suburban community were correlated with an index of father's occupation, with results on California Achievement Tests administered one year later, and with results on Otis Test of Mental Ability administered two years later. Findings were as follows: Davis-Eells results correlated negligibly with father's occupation (-.03 to .19)appreciably lower than did Otis results. Davis-Eells and Otis yielded very similar means and standard deviations, while correlating moderately (.37 to .47) with each other for various grade levels. Davis-Eells results correlated slightly with achievement test results (.27 to .38).

Division 14. Paper Reading III

9:00-9:50. New York Room, Statler
ROBERT B. FINKLE, Chairman

9:00. The development of a forced-choice scale for evaluating the administrative orientation of industrial supervisors. Leonard Wollack and Norman Gekoski, Temple University.

The purpose of this study was to test the hypothesis that a relationship exists between the emphasis placed on administrative skills and success as a supervisor. This necessitated the development of a forced-choice scale on an industrial population. The sentence completion and "critical incident" technique were employed and compared as methods of item collection. The findings appear to substantiate the basic hypothesis. The final Administrative Orientation Scale was found to offer a fairly valid and reliable measure of a supervisor's orientation toward specific administrative skills. These administrative skills were categorized into four areas: training, work rules, planning, and personnel duties.

9:15. Observation methodology and supervisory behavior. HARRY E. O'NEILL AND ALBERT J. KUBANY, General Motors Institute.

The success of the observation approach in improving manual job effectiveness has been demonstrated. The technique has been recommended for the study of managerial jobs. The claims for the technique are outlined, and a study based on 38,083 observations on 111 production foremen in two automotive assembly plants is reported. In addition to the observations, the foremen were interrogated as to their thinking. Results will be discussed, and this technique will be compared against other methods designed to give similar information.

9:30. Supporting interests and success of plant foremen. EDWARD B. GREENE, Chrysler Corporation, Detroit, Michigan.

In order to discover relations of main and supporting interests to work performance, 89 of the younger foremen were studied in a plant which had 400 foremen. Their average over-all ratings of performance for a six-month period were correlated with scores from the Kuder Preference Record and an Activity Survey by the writer. Interest in the main job activities did not predict success significantly, but interest in five other activities did. The main job activities were called Machine Trades and Management. The supporting areas were Engineering, Construction work, Training, Accounting, and Communications.

Division 19. Summarized Research Papers: I. Experimental Studies

9:00-9:50. Pan American Room, Mayflower GLEN FINCH, Chairman

9:00. The induction of performance impairment in a physical threat laboratory stress situation. WILLIAM A. GORHAM AND DAVID B. ORR, American Institute for Research, Washington, D. C.

One of the objectives of this research was to develop procedures for realistically simulating in the laboratory certain of the stresses found to exist operationally in aircrew jobs. The study reports the development of a physical threat stress situation. In addition, the development of a simulator is reported in which subjects perform tasks similar to those found to be impaired operationally. Test scores of experimental subjects are compared with those of nonstressed subjects, and indexes of performance decrement developed. Physiological measures, experimenter observations, and subjects' reports indi-

cate that the situation was successful in producing fear and performance impairment.

9:05. The reduction of performance impairment in a physical threat laboratory stress situation. DAVID B. ORR AND WILLIAM A. GORHAM, American Institute for Research, Washington, D. C.

After successfully producing fear and performance impairment in a physical threat laboratory situation, the research efforts were then directed to reducing this impairment. The study reports the exploration of five procedures designed to reduce performance impairment in this same experimental situation. Separate groups of experimental subjects were tested under each of the impairment reduction procedures. These groups were compared among themselves and with the original experimental and control groups on test scores, indices of impairment, physiological measures, and systematically recorded observations.

9:10. A Q technique study of problem load. EDITH S. JAY, System Development Corporation.

This study was planned to test hypotheses about strategy variables in problems made for ACW training and to describe the constellations of persons holding similar views about problem difficulty. Military and civilian subjects represented different system responsibilities, different team responsibilities, and different individual responsibilities in the system. Results revealed four viewpoints significantly differentiated by the hypothesized variables. Views about difficulty were found to be structured in this study around individual responsibilities. This supports the view that task difficulty attitudes are formed by individuals on the basis of their own tasks rather than by the team's interactions or by system performance.

9:15. Effects of attitude and status level on subjective preference ratings. Robert S. Andrews and Howard W. Hembree, Quartermaster Research and Engineering Field Evaluation Agency, Virginia.

The relationship between social status, attitudinal factors, and both relative and absolute subjective preference ratings is investigated. Food items comprise the stimuli administered to 190 Army enlisted men. Three techniques of scalogram analysis are applied to attitude data with favorable results. Subjects are divided into two status levels and three attitude classifications. Results demonstrate a significant influence of attitude on level of preference. Indicative information concerning effects of status

level and attitude on relative preferences is presented. The influence of status level on general attitude toward the military situation is analyzed. Implications for future research are included.

9:20. Changes in time perception following stimulus and response variations, RANDALL M. CHAM-BERS, Rutgers University.

In a sample of 120 men, it was found that accuracy in perceiving the passage of time was significantly influenced by the stimuli which were presented during standard time intervals. Empty time intervels were overestimated, but the tendency to overestimate decreased as the number of stimuli increased. Time perception was influenced by the psychomotor activity which occurred in response to component stimuli. Groups of subjects who made psychomotor responses to stimuli perceived time passage differently than groups of subjects who merely observed these stimuli. Time perception varies as a function of stimulus and response variations.

9:25. Recognition of military vehicles by observers looking into a searchlight beam. Howard C. Olson, Albert E. Goss, and William D. Voiers, Human Resources Research Office, University of Massachusetts, and University of Louisville.

Visibility at night in the face of bright, night fighting illuminants is not well known. Using a modified method of limits, this study determined detection and recognition thresholds (for approaching vehicles) of 180 soldiers looking into a tank searchlight beam. Variables of observer distance from searchlight, observer station relative to beam center, direction of vehicle approach, vehicle type, and masking noise were equally represented in the trials. Results indicate that observer station materially affects ability to observe vehicles approaching outside the beam. Contrary to expectations, "glare" was not found to significantly reduce observers' visibility of vehicles within the beam.

9:30. Validity of transception of telemetered pilot proficiency data from a high speed-high altitude vehicle. John C. Townsend, Catholic University of America.

A dynamic scope display, reacted to by pilots performing a compensatory tracking task, was telemetered from a high speed-high altitude jet aircraft and reproduced at a ground station. Correlations of .9, or better, and insignificant t's were achieved between the loci of airborne and ground scope display factors utilized in scoring pilot tracking ability. The correlations were based on 106 comparisons for each of the scope display factors considered. Component variance of the reproduced ground scope display attributable to the telemetry and reproductive system was significantly less than operator variance in the performance of the telemetered tracking skill.

9:35. Analysis of abductive and adductive phases of movement in continuous tracking. Bryce O. Hartman, W. E. Jaynes, and M. J. Herbert, U. S. Air Force School of Aviation Medicine and U. S. Army Medical Research Laboratory.

This study was concerned with the relative efficiency of the abductive and adductive phases of movement in continuous, one-dimensional sine-wave tracking. The design included left- and right-handed subjects and tracking with the preferred and non-preferred hands. Analysis of performance in terms of time-on-target and error amplitude showed no differences along any of these dimensions. Instead, lag error was found to be characteristic of performance throughout the cycle. In addition, there appeared to be some differences in performance between right and left movements, independent of any of the other experimental dimensions.

Films. Experimental

9:00-11:50. Massachusetts Room, Statler (For titles, see Films on Saturday)

Divisions 1 and 12. Symposium: Some Recent Approaches to the Study of Time Sense: Implications for Psychological Theory and for Psychopathology

10:00-11:50. Federal Room, Statler DAVID McK. RIOCH, Chairman

Participants:

WILLIAM H. Morse. Relation of temporal schedules of reinforcements to studies of time perception.

KARL PRIBRAM. Anticipation and the frontal lobes. SANFORD GOLDSTONE. Studies of time sense in normal and psychopathological states.

John S. Kafka. The temporal reference choice: Experimental and clinical observations.

Division 3. Motivation II

10:00-10:50. Ohio Room, Statler
B. A. CAMPBELL, Chairman

10:00. Response to varying degrees of novelty:
"Exploration" and "fear." Dalbir Bindra and
Nahum Spinner, McGill University.

Questions associated with exploratory and fear behaviors are considered as special cases of the general problem of response to situations of varying novelty. Some aspects of rat behavior (e.g. sniffing, grooming, freezing) were observed in three situations that differed from each other in novelty. Significant relations were found between the degree of novelty of test situation and the frequency of occurrence of various classes of response. For example, greater novelty was associated with lower sniffing scores and higher grooming scores. The observed relations pose problems which are best approached without reference to constructs such as "exploratory drive" and "fear drive."

 The effect of mild punishment on speed of running. Frank A. Logan, Yale University.

To determine the effect of a mild punishment (electric shock) on an instrumental running response motivated by hunger and rewarded by food, a two-by-three factorial was run using two frequencies of reward (100% and 50%) and three frequencies of punishment (100%, 50%, and 0%). Continuous shock significantly reduced running speed, progressively more so as shock intensity was increased. Partial shock had nowhere near the detrimental effect of continuous shock, very mild partial shock showing a slight dynamogenic effect. Rate of extinction with neither food nor shock was retarded by partial punishment but not appreciably by continuous shock.

10:20. Activity during food deprivation as a function of environmental conditions. R. Teghtsoonian and B. A. Campbell, Princeton University.

The activity of two groups of rats was studied during an extended period of food deprivation under two environmental conditions: a normal laboratory setting and an experimental setting with environmental stimulus changes held to a minimum by means of sound isolation and masking stimuli. The results indicated: the activity of the laboratory animals increased rapidly and reached a high peak level; the activity of the "constant environment" group showed a 25% decrement during the first 72 hours followed by only a slight increase. These findings support the Campbell-Sheffield hypothesis that hunger lowers response thresholds for environmental changes.

10:30. The effect of competing responses and drive strength on acquisition and extinction. Donald J. Lewis and John W. Cotton, Louisiana State University and Northwestern University. Two conditions of drive and two sizes of runway were manipulated factorially in order to explore

features of the DxH theory. Twenty Ss were assigned to each condition and given the same treatment in extinction that they had during acquisition. (a) High D resulted in superior performance throughout acquisition and for early extinction. (b) The small runway resulted in superior performance early in acquisition, but not later in acquisition. There is a reversal of this trend later in acquisition, with no difference at the end. (c) The small runway resulted in superior performance early in extinction, but not later.

Division 3. Perception III

10:00-10:50. California Room, Statler WILLIAM B. KNOWLES, Chairman

10:00. Response to horizontality by bantam chickens in level and tilted room. Robert L. Fantz, St. Vincent Charity Hospital, Cleveland.

A testing method based on natural behavior was developed as an alternative to complex training procedures for studying the perception of spatial orientation in animals. The ability of bantam chickens to select and alight on a level surface was shown by the fact that they tended to land on top of a circular perch in preference to the sloping sides. The response was disturbed little if any by a 15- or 30-degree tilt of the miniature room with its accentuated visual framework, indicating the primary importance of proprioceptive cues.

10:10. The role of postural experiences in proprioceptive perception of verticality. RICHARD G. PEARSON AND GEORGE T. HAUTY, Carnegie Institute of Technology and U. S. Air Force School of Aviation Medicine.

Ninety-six Ss were tested on a lateral-tilt chair under darkroom conditions. The task consisted of 20 trials and required S to return himself from a tilted position to the perceived vertical. Analysis of experimental errors revealed that performance by an "alternation" subgroup (in which Ss were tilted alternately left and right) was significantly superior to that of a "no-alternation" subgroup. A "delay at tilt" variable did not have a significant effect upon performance. The mere act of passing through the vertical (i.e. alternation) is a major, but often overlooked, variable in perception of verticality.

 Absolute judgments of the extent of a perspective transformation. RAYMOND C. SIDORSKY, General Dynamics Corporation, Groton, Connecticut. The problem was to determine the accuracy with which Ss can make absolute judgments of perspective transformations in the optic array. A point source shadowcaster was used to generate static end products of perspective transformations corresponding to changes in apparent pitch. Twenty-five naval officers each made a total of 210 judgments of 21 transformations spaced equally from 0° to -40°. Ss readily and accurately perceive differences in the extent of a perspective transformation as differences of apparent pitch with respect to a fixed rigid surface. The overall constant error was +1.9 degrees. Information transmitted averaged 2.52 bits.

10:30. The effect of optokinetic Gansfeld stimulation and optokinetic object stimulation on the perception of the median plane. JAN H. BRUELL AND STANLEY M. BARRY, Western Reserve University and Highland View Hospital.

Stationary objects change their apparent position when seen against* a background of optokinetic stripes. They are displaced in a direction opposite to stripe movement when seen against stripes mounted on the inside of a large optokinetic drum, and in the direction of stripe movement when seen against stripes mounted on the outside of a small drum. This difference in phenomena can be accounted for in terms of a basic difference in the two test situations: in the former situation S is surrounded by an optokinetic field, a Ganzfeld; in the latter situation S faces an optokinetic drum, an object.

Division 5. Applications of Measurement to the Study of Learning

10:00-10:50. Pan American Room, Mayflower ROBERT EBEL, Chairman

10:00. Factor structure and predictability of successive stages of learning Morse Code. Benjamin Fruchter and Edwin A. Fleishman, University of Texas and Yale University.

A battery of 14 aptitude tests, including some newly developed measures of auditory perception and printed tests of perceptual "closure," was administered to 310 airmen entering radio operator training. Correlations among these tests and proficiency at four stages of code learning were factor analyzed. The initial learning period had loadings on Auditory Perceptual Speed and Auditory Rhythm Discrimination factors and was the most predictable of the four learning periods. The second learning period had its major loading on a Speed of Closure

factor. The last two learning periods had no appreciable loadings on the factors identified and were less predictable.

 A general factor in learning. PHILIP H. DuBois and Winton H. Manning, Washington University, St. Louis.

Intercorrelations of phase grades in an electronic training course indicate a complex factor pattern. However, when variability associated with status on initial diagnostic tests is removed, the intercorrelations can be explained by the presence of a single common factor. Apportionment of variance indicates that diagnostic measures account for 15.6% of the variance of the sum of the original phase grades, the common factor accounts for 76.1%, while 8.3% is not assignable to these two sources. Results suggest that, in analyzing learning data, attainment measures should be residualized with respect to initial status.

 Sequential dependencies in learning. Nor-MAN H. ANDERSON, Yale University.

A general parameter estimation method for Bush-Mosteller- and Estes-type learning models is presented. The method uses the sequential dependencies within the observed sequences of stimulus events and responses. Illustrating the method for situations involving just 2 responses, expressions are obtained for the observed proportions of stimulus-response subsequences in terms of the parameters of the model. With the parameters estimated from the lower order dependencies, the dependencies of higher order may be used to check goodness of fit and to help pinpoint the sources of any discrepancy between the model used and the behavior under study.

 The uses of simplex theory in training research. MARSHALL B. JONES, U. S. Naval School of Aviation Medicine.

In 1954 Louis Guttman developed a technique for the analysis of correlation matrices which was based on the idea of order. In illustrating simplex theory, as he called his technique, Guttman confined himself exclusively to psychological tests; he had nothing to say about the uses of simplex theory in training research. The idea of order, however, is far more central in training than it is in testing. The simplicial study of naval air training supports this contention. At the same time, however, Guttman's original model must be considerably developed before it can be profitably applied in the training situation.

Division 5. Response Sets and Item Types

10:00-10:50. Cabinet Room, Mayflower ROGER T. LENNON, Chairman

10:00. The hypothesized contribution of test motivation variance to test validity. ROBERT PERLOFF, Science Research Associates.

A rationale is presented which may be promising for increasing test validity. This rationale suggests that observed score variance should consist not only of the conventionally held true-ability and chance-error sources of variance, but should also include motivation variance. A simple statistical model demonstrates that under certain assumptions it is theoretically possible to increase the criterion variance accounted for by the predictor by approximately 25% through an explicit consideration of test motivation variance. In addition, an experimental "Item Preference Ratings" questionnaire is presented as a possible means of implicitly introducing test motivation variance to cognitive-test situations.

10:10. Response set in ability tests as a measure of criticalness. Norman Frederiksen and Samuel Messick, Educational Testing Service.

Response sets are usually regarded as evidence of undesirable attitudes in test taking, the influences of which should be minimized. Response set is here thought of as a stylistic consistency in behavior which can be used in measuring personal characteristics. Separate set and content scores were obtained from three tests which required evaluations of writing; set scores are intended to measure criticalness in making such judgments. The study showed that reliable set scores can be obtained which correlate with each other but not with content scores. Instructions aimed at increasing criticalness tend to shift mean set scores in the expected direction.

10:20. Intra-individual response variability: Its measurement and its correlates. John R. Hills and Walter J. Raine, Educational Testing Service and Menninger Foundation.

By administering the same sentence-completion items twice along with pairs of sentence-completion items designed to be so objectively similar that the same response is expected, it was found that the correlation between Fiske's Type I variability and his Type III variability was .90 when corrected for attenuation in both scales. Correlations between these two variability scores and scores on 38 personality and intellective variables were computed. With 41 degrees of freedom none of the correlations

was significantly different from zero. The suggestion from Fiske's work that variability on free-response tests is related to flexibility or tolerance for complexity, as measured by the Personality Research Inventory, was not corroborated.

10:30. A new look at the validity of objective-type arithmetic computation and problem solving test items. WALTER N. DUROST, Educational Services, Pinellas County, Florida.

A variant method of measuring arithmetic computation and problem-solving ability was devised which requires the student to complete and turn in his work and also to match his answer found by computation with three choices given, plus "Not Given" and "Don't Know" as additional options. In three separate experiments all correlations of hand scored booklets and machine scored answer sheets exceeded .95 for single grade groups. A check on the additional amount of time required for marking the separate answer sheet showed large individual variations with the average amount of time being substantially in excess of what was anticipated.

Division 14. Symposium: Bridging the Gap Between Theory and Practice

10:00-11:50. Ballroom, Statler

LEONARD W. FERGUSON, Chairman

Participants:

GRANVILLE S. MORGAN. A saving model.

LEONARD W. FERGUSON. A life insurance model. JAMES M. MORGAN. A spending model for in-

dividuals.

SHOLEM J. BERGREEN. A spending model for organizations.

Division 14. Symposium: Motion Pictures in Industrial Psychology

10:00-11:50. Pan American Room, Statler

RICHARD S. BARRETT, Chairman

Titles: "Production 5118," "All I Need is a Conference," and "How to Handle Your Boss."

Division 19. Symposium: QPRI: A New Technique for Forecasting Personnel Requirements

10:00-11:50. Congressional Room, Statler PHILIP I. Sperling, Chairman

Participants: Marion E. Hook, Albert R. Neville, Jr., George Price, Melvin R. Marks, Sol M. Roshal, and Edgar L. Shriver.

Discussant: HARLEY O. PRESTON.

Division 2. Symposium: Experimental Studies in Learning Independently

11:00-11:50. Cabinet Room, Mayflower Sumner C. Hayward, Chairman

Participants:

SAMUEL BASKIN. Experiment in autonomous study.

CELESTE McCollough and E. Loche Van Atta. Experimental evaluation of teaching programs utilizing a block of independent work.

W. J. McKeachie. The role of student personality in independent study.

Division 3. Drugs I

11:00-11:50. California Room, Statler

WILLIAM R. UTTAL, Chairman

11:00. Behavioral effects of drugs on aversive and appetitive components of a reinforcement schedule. Joseph V. Brady, R. J. Herrnstein, and Sherman Ross, University of Maryland and Walter Reed Army Institute of Research.

Rats and monkeys in a free operant situation were maintained on a multiple schedule reinforcement program with both appetitive (intermittent food reward) and aversive (shock avoidance) components. Adminstration of sodium pentobarbital (20 mg/kg) selectively depressed avoidance responding without significantly affecting performance on the intermittent food reward component of the multiple schedule. Conversely, .2 mg/kg scopolamine hydrobromide was observed to produce a more pronounced effect upon the food rewarded behavior than upon the avoidance component. Both drugs in selected doses, however, had the effect of producing increased responding during "time-out" or "off" periods (no reinforcement contingencies in effect) interspersed between aversive and appetitive components of the program.

11:10. Drug effects interacting with fear during gradual onset of pain. Herbert Barry, III, Yale University.

Electric shock on a grid floor was gradually increased in voltage, starting below threshold. Albino rats were trained to reset the shock to zero by turning a wheel. Fear was varied after this training by increasing the shock to different levels while the wheel was unavailable. In subsequent tests, animals with different levels of fear differed in number of fecal boluses and frequency of remaining close to the wheel but did not differ in wheel turning perform-

ance. The threshold for wheel turning was lowered by methamphetamine and caffeine, raised by chlorpromazine; these drug effects were greatly potentiated by fear.

11:20. Drug effects on escape training related to delay of reinforcement, analgetic, and genetic factors. H. W. Coppock, D. V. Huard, and W. A. Meeks, Arizona State College.

The effects of tranquilizers and other drugs on learning are shown to be dependent upon interaction of spontaneous activity with delay of reinforcement, with delays as short as one second. Under immediate reinforcement, activity correlates positively with final performance; under delayed reinforcement, negatively. The latter relationship is explained by the tendency of activity to increase probability of incorrect response receiving reinforcement by occurring during delay. Delayed reinforcement is facilitated by drugs, e.g., pentobarbital, which reduce activity. Data will be related to the hypothesis that tranquilizers delay the onset and termination of fear aroused by shock.

11:30. Relative resistance to reserpine of responses based on positive, as compared to negative, reinforcement. Bernice M. Wenzel, University of California Medical Center.

To clarify the effect of reserpine on responses acquired with negative reinforcement compared with responses based on positive reinforcement, cats were trained, in a counterbalanced design, to press one bar to avoid shock and another for food, using tones as discriminative stimuli. Latency of each response was measured at identical intervals during 124 hours after reserpine and after placebo. Half the group was also tested after acquiring only the food response and stimulus discrimination. At that time, inhibition to the neutral (to-be-avoidance) tone was unaffected. In the final test, avoidance latency was significantly increased compared with the food response.

Division 3. Thinking

11:00-11:50. Ohio Room, Statler

Martin R. Baron, Chairman

11:00. Learning and transfer in problem solving as a function of method of training. Hugh E. Cahill and Dicksie J. Osgood, Pomona College.

In recent experiments repeating and extending Katona's work with card tricks Hilgard et al. gained evidence favoring transfer from "meaningful" as opposed to "senseless" learning in transfer tasks. In the present study the generality of these transfer results was tested by comparing a Katona "Understanding" group with Rote learning and Trial-anderror learning groups under somewhat modified conditions. The findings indicated superior transfer for the Rote group in a simple transposition task and equal superiority of the "Understanding" and Trial-and-error groups over the Rote group in a second, less similar transfer task.

11:10. Information transmission in problem solving as a function of uncertainty and stress. F. Robert Brush, University of Maryland.

The effects of stress on information transmission in problem solving are determined under conditions which vary only in the amount of information which must be transmitted to reach solution. The stress variable is shown to interfere with transmission under some conditions while facilitating transmission under others. An informational analysis of problem solving is demonstrated to be feasible, and attention is called to the importance of quantifiable parameters of a performance task in determining the effects of stress on performance.

11:20. Concept identification as a function of amounts of relevant and irrelevant information. CLINTON M. WALKER AND LYLE E. BOURNE, JR., System Development Corporation and University of Utah.

Concept identification was studied as a function of amounts of relevant and irrelevant information within the geometric patterns used as stimuli. An attempt to predict performance as a function of stimulus bits of information proved successful. Interpreted in terms of a matrix model, the major findings were as follows: Performance decreased linearly with increased irrelevant information. Performance decreased exponentially with increased relevant information, For increased relevant and irrelevant information, performance was an invariant function of location in a symmetric matrix left from a diagonal matrix extraction for difficulty level and a simple transformation to make all but diagonal elements less than unity.

11:30. Concept identification as a function of probability of information feedback and task complexity. LYLE E. BOURNE, JR., University of Utah.

Concept identification was studied as a joint function of probability of information feedback about response correctness and degree of task complexity as graduated in terms of the number of stimulus dimensions irrelevant to problem solution. The major findings were: Feedback probability was a consistently significant source of variance in the analyses; performance decreased linearly as feedback probability decreased. Performance decreased linearly with increased number of irrelevant stimulus dimensions. The feedback probability by task complexity interaction was not statistically significant. The results were in accord with the predictions generated from a probability model for discrimination learning.

TUESDAY AFTERNOON, SEPTEMBER 2

Division 2. Symposium: The Freshman Psychology Course and Emphasis on Self-Understanding

12:00-12:50. Cabinet Room, Mayflower

JAMES F. PENNEY, Chairman

Participants:

EDWARD COLEMAN GLANZ. Self-understanding and need centered learning.

ROBERT W. HAYES. Self-understanding and groupwork procedures.

JAMES F. PENNEY. Self-understanding and individual counseling.

Division 3. Drugs II

12:00-12:50. California Room, Statler H. W. Сорроск, Chairman

12:00. The effect of amphetamine on food intake in normal and hypothalamic hyperphagic rats. ROBERT W. REYNOLDS, University of California, Santa Barbara.

This study was designed to examine the hypothesis that amphetamine has its anorexigenic effect through excitation of the "satiety center" in the ventromedial hypothalamus. Normal controls and animals with ventromedial lesions, under 24 hour deprivation, were given amphetamine injections 15 minutes before test feeding. There were no differences in food intake between groups after control injections of normal saline. All dosage levels of amphetamine produced significantly greater depression of food intake in operates than in controls (p < .01). This result is in the reverse direction from that predicted. There was no correlation between anorexigenic effect and degree of induced hyperphagia.

12:10. Some behavioral effects of methamphetamine, caffein, and methyl phenidate. IRWIN ROS-ENBERG AND FRANCIS MECHNER, Schering Corporation.

Three newly developed two-response reinforcement schedules were employed in an investigation of the behavioral effects of methamphetamine, caffein, and methyl phenidate in rats, Mona monkeys, and Rhesus monkeys. Under one of these procedures the animal is required to press Lever A a minimum number of times before a response on Lever B will be reinforced. Under another, a response on Lever A starts a time interval, after at the end of which the first response on Lever B is reinforced. The patterns of drug action are examined in terms of rate and organization of the behavior.

12:20. The effects of prenatal alcoholism upon motivation, emotionality, and learning in the rat. NICHOLAS M. VINCENT, Jacksonville University.

At maturity, the experimental animals which were subjected to prenatal alcoholism were compared to the controls. The animals which had received the two smaller dosages of alcohol were significantly superior to the controls in motivation as measured by speed of swimming to a goal. The animals which had received the smallest amount of alcohol were significantly less emotional than the controls, whereas those animals which had received larger dosages of alcohol were significantly more emotional than the controls. The experimental animals were significantly inferior in learning ability as measured by time, errors, and trials when compared to the controls.

Division 3. Human Learning

12:00-12:50. Ohio Room, Statler
Lyle E. Bourne, Jr., Chairman

12:00. Verbal performance and eyelid conditioned responses with various levels of anxiety. Martin R. Baron, John J. Billey, and James P. Connor, Kent State University.

Two experiments deal with the functional relationship between anxiety (MAS scores) and performance of learned responses. In the first, subjects are required to learn two sets of associations: in one the correct response is initially high in the hierarchy, whereas in the other it is initially low. A significantly curvilinear relationship was found between anxiety and high association verbal responses; a similar but not significant relationship was found with low association responses. In the

second experiment, the relationship between anxiety and the eyelid conditioned response was found to be linear. Thus, anxiety affects conditioned responses and verbal responses differently.

12:10. The effect on eyelid conditioning of adaptation to two intensities of the UCS. LLOYD E. HOMME, HARRY W. BRAUN, AND RICHARD GEISELHART, University of Pittsburgh.

This study investigated the possibility that response decrement during preconditioning adaptation trials rather than lowered drive could account for the lowered probability of CRs during eyelid conditioning. Two UCS, air-puff intensities were used: 2 lbs./sq. in. and 0.6 lbs./sq. in. Two groups of 10 Ss each received 50 adaptation trials with each intensity followed by 50 conditioning trials with the same intensity. Two control groups received only 50 conditioning trials with the same intensity. Analysis of variance of differences in mean total CRs shows the intensity variable significant, habituation not significant, and the interaction marginally significant.

12:20. The memory span in series of known and unknown lengths. NANCY C. WAUGH, Massachusetts Institute of Technology.

The initial and terminal memory spans are defined as the mean number of serial items correctly recalled before the first failure in recall from the beginning or from the end of a subseries respectively. Subjects recalled subseries of 12 items with and without preinformation as to the subseries' location in series of different lengths. The initial span is less affected than the terminal by delay between exposure and recall of the subseries, and it increases more than the terminal when preinformation about the subseries' location is given to the subject.

12:30. Are initial responses to a learning sequence random? HILTON M. BIALEK, Human Resources Research Office, California.

The frequency of predictions of a given event is known to reach an asymptote which is equal to the frequency of occurrence of the event. It is tacitly assumed that the initial response frequency is a simple function of the number of alternative choices available. An experiment was designed to test, in part, this tacit assumption. In 20 of 24 sequences, initial response frequency differed significantly from chance expectancy. It is concluded that, if initial responses are not random, then the generally held assumptions explaining the shape of the learning curve require further investigation and revision.

Divisions 3, 5, and Psychometric Society. Symposium: Should Characteristics of Scales of Measurement be Prime Determiners of Statistical Practices?

Donald J. Lewis, Chairman

12:00-1:50. Pan American Room, Statler

Participants:

C. J. BURKE. The answer is No.

S. S. STEVENS. The answer is Yes.

Discussants: LLOYD G. HUMPHREYS, LYLE V. JONES, AND IRVING LORGE.

Division 14. Paper Reading IV

12:00-12:50. New York Room, Statler SEYMOUR LEVY, Chairman

12:00. Small group leadership. CHARLES E. HALL, SALVATORE N. CIANCI, JOHN E. TAYLOR, AND JOHN B. McKAY, Human Resources Research Office. (Sponsor, Preston S. Abbott)

The functioning of small industrial and military work groups can be categorized into two interdependent behaviors, those of subordinates and those of leaders. Based upon the theoretical considerations of Homans, Whyte, Firth, and Gibb, a theoretical construct of leader behavior in small groups was formulated. This formulation emphasizes two aspects of leadership behavior: headmanship and personality traits. Headmanship is described as the application of rules and procedures in getting the job done; personality traits is described as the leader's manner of conducting face-to-face relationships with subordinates while doing the job. The relationship between this theoretical construct and industrial and military operations is discussed.

12:25. A field-theoretical approach to managerial leadership. David A. Emery, General Electric Management Research and Development Institute.

The fundamental condition for effective work motivation is for each man to see the objectives of his organization unit as the best means of achieving his own long-range work goals. On this basis, plus the assumption that men's long-range motives can—and often do—change, a set of specific recommendations for managerial methods of planning, organizing, appraising, and communicating are developed. (Survey results on middle-management work motives are used as examples of long-range work goals.) Implications of the theory for the current issues of managerial persuasion versus command and the legitimacy of corporate managerial authority are considered.

Division 19. Symposium: Interpretation of Extremely High Altitude Photography

12:00-12:50. South American Room, Statler ROBERT B. SLEIGHT, Chairman

Participants: E. Laurence Chalmers, Jr., Ethan D. Churchill, William T. Pollack, George Meyer, and Ellis L. Rabben.

Division 1 and Psychometric Society. Symposium: Mathematical Models in Psychology: Modern History and Some Case Histories

1:00-3:50. Ballroom, Statler

EUGENE GALANTER, Chairman

Participants:

ROBERT R. BUSH. The last ten years.
R. DUNCAN LUCE. Utility and decision theory.
SAUL STERNBERG. Stochastic learning models relaxing the independence of path assumption.
WALTER A. ROSENBLITH. Models of neurophysical statements.

J. C. R. LICKLIDER. Quasi-linear dynamic models. WILLIAM J. McGILL. Modern psychophysics.

Division 2. Symposium: How to Use Films Most Effectively in Teaching Psychology

1:00-2:50. New York Room, Statler

ELIZABETH B. HURLOCK, Chairman

Participants: Anne Anastasi, Alan Kellock, Elliott M. McGinnies, Norman L. Munn, Walter J. Smith, and L. Joseph Stone.

Divisions 2 and 14. Symposium: Teaching Psychology Within Industry

1:00-2:50. Federal Room, Statler

B. von Haller Gilmer, Chairman

Participants: Aaron Levenstein, Robert L. Decker, Robert V. Hamilton, and Donald W. Taylor.

Division 2 and Psi Chi. Symposium: Social Responsibilities of Psychologists: Implications for Training

1:00-2:50. Jefferson Room, Mayflower

MAX MEENES, Chairman

Participants: Edwin B. Newman and Franklin P. Kilpatrick.

Discussant: MELVIN R. MARKS.

Division 3. Animal Learning I

1:00-1:50. California Room, Statler

J. R. STRANGE, Chairman

1:00. The role of the anticipatory goal response in irrelevant-incentive learning. James A. Dyal, Southern Methodist University.

Analysis of studies of irrelevant-incentive learning under strong competing drive suggests that the likelihood of positive results might be improved by increasing the vigor of the irrelevant r_g . Rats, 22 hours hungry but minimally thirsty, were trained to make vigorous drinking responses (saccharin solution) and eating responses (wet mash) in distinctive goal boxes. During test, the Ss were given 20 free-choice trials under extinction conditions; half of the Ss were thirsty, half hungry. The positive results are interpreted as evidence for irrelevant-incentive learning mediated by the r_g characteristic of drinking.

1:10. Conditioning rate and defecatory reaction in mice. E. Tobach and T. C. Schneirla, American Museum of Natural History.

One group of weanling mice handled daily from day of birth and one group handled every five days only were observed in a standard open-area situation (under water deprivation) and then conditioned to escape electric shock. The first mentioned group yielded a positive correlation between defecatory reaction in the open-area situation and conditioning rate; the second group yielded a negative correlation between defecatory reaction during conditioning trials and conditioning rate. The data are related to validation of the defecatory reaction in rodents as an "anxiety" response and of the phenomenon of quick conditioning in "anxious" individuals of human and infrahuman species.

 Distribution of practice and latent extinction effects. F. T. Crawford, Georgia State College.

The runway performance of 64 albino rats was observed in a $2 \times 2 \times 2$ experimental design in which animals received massed or spaced training trials, massed or spaced extinction trials, and normal or latent extinction. Nonparametric statistical analysis indicated: animals receiving spaced training trials ran significantly faster than animals receiving massed training trials; animals receiving latent extinction trials extinguished more rapidly than those not receiving latent extinction trials; no significant differences were found between animals receiving spaced extinction trials and those receiving massed extinction trials. It is concluded that

latent extinction effects are independent of distribution of practice.

1:30. Discrimination reversal as a function of distinctiveness of positional cues and distribution of trials. ALVIN J. NORTH, Southern Methodist University.

Albino rats were given a series of discrimination reversal problems. The variables were presence or absence of a distinctive positional cue and distribution of trials. The presence of distinctive positional cues facilitated reversal of a position habit. Performance under the massed conditions was somewhat superior to that under 24-hour spacing of trials, but improvement occurred under both conditions. When a group was shifted from the massed to a spaced condition, its performance became equivalent to that of a group trained under the spaced condition from the outset.

1:40. A test of two hypotheses of latent extinction. John P. Seward and Robert B. Jones, University of California, Los Angeles.

To decide between hypotheses of nonreward expectancy and weakened secondary reinforcement, we tested latent extinction with differential secondary reinforcement eliminated. After runway training to food, two random groups of 10 rats had 10 spaced extinction trials a day. Before each trial Group E spent 30 sec. in the empty goal-box, Group C in another box. An opaque door blocked all Ss from the goal-box on extinction trials. Group E started and ran significantly faster than Group E on two of three extinction days. Latent extinction does not depend on differential secondary reinforcement from the goal-box.

Division 3. Psychophysics

1:00-1:50. Ohio Room, Statler

E. RAE HARCUM, Chairman

1:00. Successive intervals scaling of hue differences. Carl E. Helm, Princeton University. (Sponsor, Samuel J. Messick)

The stimuli consisted of a set of 20 color chips evenly spaced around the color circle. Each chip was paired with every other chip, and each such pair was rated on a 13-point scale with regard to similarity of hue. The resulting matrix of interpoint distances was analyzed assuming that the points defined a Euclidean space. The projections of the points in the plane of the first two axes reproduce the color circle quite accurately. However, several significant smaller dimensions occurred which ap-

pear to be the result of an underestimation of large distances or of the inappropriateness of the Euclidean model.

1:10. The minimum audible angle. A. W. Mills, Harvard University.

The difference limen for the azimuth of a source of pure tones was measured as a function of the frequency of the tone and the direction of the source. The results are also considered in terms of the interaural differences in phase, time, and intensity that correspond to differences in the direction of the sound source. A comparison of these interaural thresholds with those obtained by other investigators with dichotic stimulation indicates that the localization of pure tones is determined by interaural differences in phase, or time, at frequencies below about 1,400 cps, and by differences in intensity at higher frequencies.

1:20. The effect of distribution skewing upon judgment with free choice of scale. Samuel Fillenbaum, McGill University.

In the context of Helson's Adaptation Level approach this study examined the effect on judgment of varying the distribution of stimuli. Subjects were allowed to use as many categories as they wished in rating the slimness-broadness of each of a series of rectangles. Initially, all stimuli were presented equally often; later, the slimmer rectangles appeared twice as often as the others. While a significant number of subjects showed the predicted downward shift in Adaptation Level, the stimulus called neutral, over-all there were no significant shifts in rating of the stimuli. Some implications of these results are discussed.

 Short-range sizes estimates as a function of increasing distance. Noël Jenkin, Vineland Training School.

Under conditions of free binocular regard and ample illumination, objective size-matches of a distant standard decreased regularly as a function of the distance of the comparison object from the subject's eyes (20 in., 40 in., 80 in. and 160 in.). Plotted against the logarithms of the distances, the mean size-matches yielded points fitted by a straight line. The direction of the relationship is opposite to that predicted in terms of visual angle equivalence. In two different experiments, the matches at any given distance were significantly different from the matches at any adjacent distance. Control experiments indicated that the results are not an artifact of the method adopted.

Division 19. Symposium: Man in Space

1:00-1:50. Congressional Room, Statler Wilse B. Webb, Chairman

Participants:

S. B. Sells. Human requirements for space travel. Charles Hill. Research to date on space travel. Wilse B. Webb. Implications of space research for psychology.

Films. Industrial and Personnel

1:00-4:50. Massachusetts Room, Statler (For titles, see Films on Saturday)

Divisions 2 and 3 Joint Committee on the Teaching of Experimental Psychology. Meeting

2:00-2:50. California Room, Statler

ROBERT S. DANIEL, Chairman

Participants: Harold W. Hake, E. Parker Johnson, William N. Schoenfeld, and George H. Zimny.

Division 3. Animal Behavior III

2:00-2:50. Pan American Room, Statler
L. STARLING REID, Chairman

2:00. Extinction in Paramecium aurelia. Beatrice Gelber, University of Chicago.

To investigate whether extinction could be demonstrated with the protozoan, Paramecium aurelia, 3 groups of cultures were given identical reinforced training with spaced trials, and retention tests 2 hours later. The groups received different numbers of nonreinforced, massed trials immediately before final tests. Group II received 10 such trials; Group II received 5; Group III received none. Group III's response exceeded the others beyond the .01 level of confidence. Control groups, without any training, gave zero responses. It is concluded that an effect analogous to extinction was demonstrated.

2:10. Approach, avoidance, and galvanotropism. W. N. Kellogg, Florida State University at Tallahassee.

To investigate galvanotropism, both humans and marine organisms were individually shocked between DC electrodes in a salt-water tank. The fishes approached the anode as predicted. The humans unexpectedly reported the shock to be strongest near the cathode and weaker elsewhere. As a consequence 8 arrangements of electrodes were designed to permit fish to avoid the cathode without at the same

time forcing them to approach the anode. The fishes thereupon avoided both electrodes. In galvanotropism, fishes are simply avoiding an intense electrical field near the cathode, as the laboratory rat avoids a charged grid.

2:20. Strain differences of rats in behavior and brain chemistry. Mark R. Rosenzweig, David Krech, Edward L. Bennett, and Charles L. Longueil, University of California.

In a continuing study of relations between adaptive behavior and brain chemistry, we have found that the S₁ strain (descendants of Tryon's Maze-Bright rats) perform significantly better than the S₃ strain (descendants of Tryon's Maze-Dull rats) on the following tests: left probability learning in the Krech Hypothesis Apparatus, the Lashley III maze, the Hebb-Williams maze, the Dashiell maze. In brain analyses, the S₁ rats show significantly greater cholinesterase activity and significantly lighter brain weights than the S₃ rats. These results emphasize the importance of strain differences in both behavior and brain chemistry.

2:30. Performance differences among mouse strains in a learning situation. Gerald E. McClearn, University of California.

Investigation of relationships among behavioral characteristics, and between behavioral and physiological characteristics, of inbred animals and their hybrids could be a valuable technique for analysis of learning and motivational processes. This study was undertaken to determine if reliable differences in learning performance could be demonstrated in inbred strains of mice. Fifty-nine mice from three inbred strains (C3H/NT, C57BL, BALB/c) were tested for 20 trials on an elevated Lashley III maze. With p < .002, the C3H/NT are inferior to the C57BL and BALB/c animals, and the C57BL are inferior to the BALB/c, in total error scores and in initial cul entry scores.

Division 3. Perception IV

2:00-2:50. Ohio Room, Statler

RAYMOND C. SIDORSKY, Chairman

2:00. Estimating time-to-collision. WILLIAM B. KNOWLES AND W. L. CAREL, General Electric Company, Ithaca, New York.

An analysis of the geometry of head-on-collision situations shows that the relative change of visual angle per unit time determines the time remaining to collision. This experiment was designed to reveal whether observers could utilize this kind of information in the absence of other cues such as familiar size, distance, speed, etc. It was shown that for periods up to about four seconds estimates were surprisingly accurate. Beyond four seconds the times were progressively underestimated.

2:10. Some conditions for the occurrence of the kinetic depth effect. BERT F. GREEN, JR., Massachusetts Institute of Technology.

Some of the conditions under which the kinetic depth effect occurs have been studied using movies of computer generated displays. Observers viewed movies of rotating three-dimensional configurations of dots and lines and rated each configuration on a five-point subjective scale of coherence (rigidity) and depth. With dot configurations, increasing the number of dots and the amount of constraint increased the apparent rigidity. With configurations of straight line segments, regular figures always appeared rigid. Increasing the number of lines improved the coherence of connected and unconnected random lines. In no case did a figure appear completely two-dimensional.

2:20. The influence of monocular cues on the perception of pseudoscopic depth. Jane M. Bowen, Dunlap and Associates, Stamford, Connecticut. (Sponsor, Roland C. Casperson)

Observers find it difficult or impossible to perceive the pseudoscopic depth reversal of realistic scenes. This effect is thought to be reduced or eliminated if the scene is "abstract." It was hypothesized that these effects are related to the number and quality of familiar monocular depth cues. Thus if their orientation was unfamiliar, i.e., inverted, the depth reversal should be perceived more readily. Under this condition pseudoscopic depth acuity should lie between that obtained with the realistic and the abstract scene. A projection technique was developed to permit objective estimates of pseudoscopic depth, and data obtained to support the hypothesis.

2:30. Overcompensation in size-constancy. V. R. CARLSON, National Institute of Mental Health. This study is a preliminary check on the hypothesis that overcompensation in size-constancy is due to an expectancy on the part of S that apparent size diminishes with increasing distance. Thirty Ss made size matches according to an instruction specifying apparent size and another instruction specifying actual size but without requiring any difference in S's performance. Yet over-constancy occurred when the Ss matched for actual size but not when they matched for apparent size. Significant partial reliability coefficients and high correspondence between S's ver-

balizations and actual performance indicate in operational terms an expectancy of decreased apparent size with increased distance.

Divisions 3 and 7. Symposium: The Effects of Infantile Experience on Development and Behavior

2:00-3:50. South American Room, Statler J. P. Scott, Chairman

Participants:

S. LEVINE AND G. W. LEWIS. Physiological development in infancy as a function of prior experience.

F. A. KING, S. A. CARTER, AND B. PASAMANICK. Behavioral effects of brain damage as a function of early experience in the rat.

V. Denenberg. The effects of critical periods and the amount of early experience upon adult learning.

W. A. Mason. The effects of previous experience on noncompetitive social interaction, social preference, and dominance in rhesus monkeys.

Discussants: J. McV. HUNT AND FRANK BEACH.

Division 5. Statistical Developments

2:00-2:50. Cabinet Room, Mayflower NATHAN JASPEN, Chairman

2:00. Statistical tests for differences in correlated means. Ardie Lubin, Walter Reed Army Institute of Research.

In many experimental designs, Ss are used as their own controls. When Ss have been tested under three or more treatment conditions, the usual two-way analysis of variance cannot be used because the assumption of independent observations may not hold. At least two tests, which assume normality, can be used: Rao's exact multivariate analysis of variance and Box's approximate test. Kendall's W is a rank-order test which assumes that all score distribution shapes are the same, but the shape does not have to be normal. If an a priori order for the means can be postulated, very sensitive rank-order tests can be made based on Spearman's rho or Kendall's tau.

2:10. On the use of cumulative response curves in psychology. WILLIAM F. BATTIG, University of Virginia.

The increasing use of cumulative response curves for the communication and analysis of experimental results is shown to involve some serious shortcomings, because they typically appear smoother and (when compared) farther apart in position than noncumulative curves. When pairs of curves representing the same data plotted both cumulatively and noncumulatively were compared, subjects consistently judged the cumulative curves as more similar in shape, and the noncumulative curves as more similar in position. Consequently, the tendency to use cumulative curves with mall numbers of subjects and without statistical analysis has several important implications, which will be discussed.

2:20. A comparison of factor analysis and pattern analysis, DAVID J. FITCH, University of Illinois.

Two methods of classifying individuals are compared by using each to first classify the group using one sample of items and then, taking a second sample of items and using information on how a key individual from each class behaves, to predict the behavior of the others. The method of pattern analysis used is essentially McQuitty's similarity analysis. The factor analysis sequence involves picking key individuals using a quartimaxed centroid, classifying individuals using a square root method and classifying items by a factor score approach. The group used is senators, resulting in two classifications of the 83rd Senate.

2:30. Adjusting the level of grades from different schools to enable treatment as a single sample. WILLIAM V. CLEMENS, National Board of Medical Examiners.

Criterion measures, such as school grades, frequently vary considerably from school to school. Thus, being an "A" student at one school may be qualitatively quite different from being an "A" student at another school. The correlation coefficient obtained between a test and ratings from different schools under these conditions is frequently anything but a descriptive statistic. Under the assumption that the grades from school to school vary by a scaling constant and an additive constant, and that a standard measure of achievement is available which correlates positively with grades in each of the schools, a formula is developed for converting the grades in a manner which will maximize the correlation between the test and the converted grades. A numerical example is given.

Division 19. Invited Address

2:00-2:50. Congressional Room, Statler JOHN C. FLANAGAN, Chairman

Frank A. Geldard. Military Psychology in Other Countries.

Division 2. Symposium: Nature, History, Development, and Purpose of the First Course in Psychology in American Undergraduate Education

3:00-4:50. New York Room, Statler GABRIEL D. OFIESH, Chairman

Participants:

GABRIEL D. OFIESH. History, development, and present status of the first course.

ROBERT S. HARPER. Place of psychology in general education.

FLOYD L. RUCH. What are the issues of introductory psychology in a liberal arts college.

E. J. ASHER. The content of a one-semester introductory course in psychology.

Division 2. Open Meeting: Psychology in the Junior and Community College

3:00-5:50. Ohio Room, Statler

EMILY M. FLETCHER COOPER, Chairman

Division 3. Animal Behavior IV

3:00-3:50. California Room, Statler R. W. Leary, Chairman

3:00. A two-direction homing experiment with pigeons. J. G. Pratt and H. G. Wallraff, Duke University and Max-Planck Institut, Wilhelmshaven.

Single releases of pigeons without directional training were made from four points near Giessen in Central Germany. Of the 112 birds released, 49 were from a loft 185 miles to the south; 63 from lofts located 130-220 miles to the north. The departure flights (observed with fieldglasses) at each of the four points were grouped appropriately in the two home directions. Orientation toward the goal was confirmed by the distribution of birds found on the way and by a high percentage of homing success.

3:10. Perceptual learning and concept formation in the albino rat. HAROLD C. STRASEL, KENNETH M. MICHELS, AND WILLIAM BEVAN, JR., US AAD Human Research Unit, Fort Bliss, Texas, Purdue University, and Emory University.

An experimental verification of the theoretical speculations of Hayek, concerning the essential unity of sensation, perception, and concept formation, and of Hebb with regard to the learned quality of perception. These speculations were studied by testing perceptually naive animals in a series of three visual discrimination situations engineered so as to allow both perceptual learning and concept formation. A

fourth situation followed these as a test between these animals and normal controls. Concept formation and perceptual learning were demonstrated on the part of the naive animals and the theoretical positions above were verified.

3:20. Prediction of response rate to simultaneously presented stimuli from single-stimulus rates. Werner K. Honig, Denison University.

Using the spectral generalization gradient as a continuum of response strength, stimuli were presented to pigeons separately and in pairs. For a given pair, the total double-stimulus rate was equal to the stronger single-stimulus rate, and the rates to each stimulus were in the same ratio as the corresponding single-stimulus rates. These relationships were unaffected by the manner of selection of pairs and by discrimination training before the generalization test. A hypothesized behavior pattern fitting these data is maintenance of a single double-stimulus rate with a distribution of time spent responding to each stimulus in the proportion of the single-stimulus rates.

3:30. Gross motor behavior in an infant gorilla.

HILDA KNOBLOCH AND BENJAMIN PASAMANICK, Ohio State University College of Medicine.

Gesell Developmental Examinations were done on the infant gorilla born in the Columbus Zoo December 22, 1956, and cinema recordings made of her behavior every two weeks until age 40 weeks, every four weeks until 56 weeks, and again at 15 and 18 months. Comparisons of gross motor behavior with that of chimpanzee and human infants indicate that the gorilla progresses at a more rapid rate than the other primates. A qualitative difference from humans is present at birth and becomes clearly defined by age 10 weeks. (If another expected infant gorilla survives, data on its examinations will be added).

Division 3. Brain Stimulation

3:00-3:50. Pan American Room, Statler John A. Stern, Chairman

3:00. Changes in sexual behavior in female rats following subcortical electrical stimulation. Peter Karinen and O. Thomas Law, University of Michigan.

The purpose of this study was to explore further the hypotheses suggested by Brookhart, Law and O'Malley, and others regarding the hypothalamic mechanisms of control of the endocrine cycle and of mating behavior. Multiple stimulating electrodes were implanted in diencephalic regions, chiefly the hypothalamus, in female rats. Forced stimulation through these electrodes for periods ranging from one to ten minutes altered the estrus cycle and mating behavior when these electrodes were placed in the central and posterior hypothalamus. In some instances, facilitation of mating responses was observed during and following the period of stimulation. In other cases, mating scores were depressed. Similar effects were obtained on the estrus cycle.

3:10. Inhibitory effect of positively reinforcing brain stimulation on learning. LARRY STEIN AND ELIOT HEARST, VA Research Laboratories in Neuropsychiatry, Pittsburgh and Walter Reed Army Institute of Research.

Thirsty rats with electrodes in septal and hypothalamic regions were trained in a 2-lever Skinner box to press one lever at a tone and the other at a clicking noise for water. A brief, positively reinforcing brain shock always accompanied the onset of one of the discriminanda. Though perfect performance was eventually obtained, learning to the stimulus paired with brain shock always was severely retarded. Dimming of the box lights or a moderate pain shock (control for "distraction") substituted for the brain shock in unoperated controls gave no retardation. A food pellet (control for reinforcing effect) produced a much smaller, but reliable, retardation.

3:20. Avoidance learning motivated by a "fear-like" response elicited by stimulation of thalamus of cat. WARREN W. ROBERTS, University of California, Los Angeles.

The thalami of 16 cats were gridded with a total of 236 chronic electrodes. Stimulation of 21 points elicited a "fear-like" skulking or cowering response. The remaining points elicited visual searching or stereotyped motor responses. Nine cats were given avoidance training with stimulation of a "fear-like" point as the aversive stimulus. All reached a 9/10 avoidance criterion within 30 trials. Histological reconstructions localized the "fear-like" response in the dorsal thalamus in the vicinity of the nuclei medialis dorsalis and centralis lateralis. The anxiety reducing effects of frontal lobotomy may be due to interruption of the extensive connections between this area and frontal cortex.

3:30. Effects of brain stimulation on learning sets in rats. James Olds and Marianne E. Olds, University of Michigan.

Stimulation at different brain points was introduced to study its disruptive effects on learning set behavior in rats. Stimulation at certain cortical and thalamic points had no effect at all. Stimulation of some caudate points caused general disorganization of behavior. Stimulation in some regions of the colliculi, epithalamus, anterior thalamus, caudate, and hippocampus disrupted learning selectively, leaving other aspects of performance unaffected.

Division 5. Special Session: Report on the Planning Project for a National Study on the Identification, Development, and Utilization of Human Talents

3:00-4:50. Pan American Room, Mayflower John C. Flanagan, Chairman

Division 19. Symposium: Methodology for Establishing Military Research Requirements

3:00-4:50. Congressional Room, Statler

THEODORE R. VALLANCE, Chairman

Participants: Abraham Carp, Walter F. Grether, Edward H. Kemp, Charles W. Hill, Joseph A. Tucker, Richard A. Weiss, and Joseph C. Hammock.

Discussant: ARTHUR W. MELTON.

TUESDAY EVENING, SEPTEMBER 2

Division 14. Interview

8:00-9:50. Federal Room, Statler

MIKE WALLACE interviews RAYMOND A. KATZELL. Industrial Psychology Faces Its Critics.

Division 19. Symposium: Recent Planning Activities for Military Psychology in the Department of Defense

8:00-9:50. Ballroom, Statler

LEONARD CARMICHAEL, Chairman

Participants:

PAUL FOOTE. Science and defense.

ARTHUR W. Melton. Methodology and perspective for defense scientific planning, with emphasis on psychology.

ROBERT B. MILLER. Design and use of man-machine systems.

CLIFFORD T. Morgan. Human performance capabilities and limitations.

ROBERT GAGNE. Decision processes.

EDGAR F. BORGATTA. Team functions.

WILBUR SCHRAMM. Persuasion and motivation.
PHILIP SELZNICK. Adaptation of complex organizations to changing demands.

CARL PFAFFMAN. Manned space flight.

WEDNESDAY MORNING, SEPTEMBER 3

Division 3. Animal Learning II

9:00-9:50. Ohio Room, Statler

ALVIN J. NORTH, Chairman

9:00. Alley length and time of food deprivation in instrumental reward learning. Norma F. Besch, Columbus Psychiatric Institute and Hospital, Ohio.

Eighty rats were trained to run to food in a straight alley. A factorial design was employed with two lengths of alley and two levels of food deprivation. Both running and starting speeds were significantly faster for the short alley groups than for the long alley groups. Deprivation time had a significant effect only for starting speeds. The interaction between deprivation time and alley length was insignificant for both measures. It is concluded that the results are in agreement with Spence's K-factor interpretation of within-chain delay of reinforcement rather than with Hull's habit interpretation.

9:10. Occurrence of an inhibiting (frustration?) effect when the experimenters expected secondary reinforcement. RICHARD C. DEBOLD AND NEAL E. MILLER, Yale University.

Using a chronic oral fistula to measure both (a) anticipatory licking which had been classically conditioned to a flashing light and (b) the secondary reinforcing value of the CS, an attempt was made to correlate anticipatory responses and secondary reinforcement. Rats were trained to bar press for water, were classically conditioned to flashing lights (without bar), and extinguished on bar pressing (without light). They were then tested on bar pressing for the light. The results were exactly opposite to expectation. Animals conditioned under paired CS-UCS performed more poorly in the secondary reinforcement situation than animals which had received unpaired trials.

 Studies of Hull's concept of reactive inhibition. PAUL E. THETFORD, Texas Western College.

Three experiments were conducted with Albino rats to test effect of amount of work, rate of elicitation of work, and rest intervals upon I_R as measured by decrements in linear runway performance. Reward conditions, distribution of practice, and response increments due to learning were held constant. E manipulated independent variables by rotating Ss in a large revolving wheel. The results

partially supported prediction concerning effect of increasing amounts of work upon response decrements. The predictions concerning effect of rate of elicitation and rest intervals upon performance were not supported. Results were discussed within the framework of Hullian inhibition theory.

9:30. The effect of intra- and extra-maze cues on incidental learning in the rat. J. R. Strange and J. W. Carper, Southern Methodist University and Chicago, Illinois.

According to Hebb most rat learning is to stable, distant cues. The problem was to determine the effect of such cues on incidental (latent) rat learning. A control and an incidental-learning group ran a gray U maze with stable extra-maze cues. Similar groups ran a black-white U maze with intra-maze cues only. An analysis of variance showed that incidental learning had occurred. It was also shown that incidental (latent) learning occurs better with added extra-maze cues than with intra-maze cues only, suggesting difficulty for a Hull-type theory to explain.

Division 3. Stimulus Detection

9:00-9:50. California Room, Statler Noël Jenkin, Chairman

9:00. Discrimination of stimuli as a function of their proximity to the training stimulus and instructions during training. Bernard W. Harleston, Tufts University.

After being trained to react only to the center lamp on a curved panel of 11 lights, subjects were periodically tested on a given light to the left or right of the center light. Accuracy of discrimination of test stimulus from training stimulus was demonstrated to be a function of the proximity of the test stimulus to the training stimulus. In addition, subjects trained under repeated pressure to react quickly produced more response to the test stimuli at each position. Accuracy of discrimination increased as the number of test trials increased up to five for the pressured group, but only up to four for the nonpressured group. This latter group made more responses to the test stimuli on the fifth test than on the fourth.

9:10. A statistical model of multi-source discrimination. Hugh M. Bowen, Dunlap and Associates, Stamford, Connecticut.

Experiments were conducted which required subjects to discriminate one signal source from many (2 to 12) sources. Discrimination was based upon the relative frequency of supraliminal signals. The main aim of the experiments was to test a statistical model of discrimination when the data did not depend primarily upon the resolving power of the special senses and when more than two events had to be compared. Predictions from the model and the data agreed moderately well, and it is shown that the model can be extended to cover Δ I/I functions drawn from standard psychophysical data.

9:20. Cessation of visual experience under prolonged uniform visual stimulation. WALTER COHEN AND THOMAS C. CADWALLADER, University of Buffalo.

Under both monocular and binocular conditions, Os reported a temporary cessation of the sense of vision ("blank-out") after prolonged exposure to a uniform field. The blank-out was facilitated by extensive prior stimulation. Such factors as blinking and eye movement as well as the presence of an object in the field tended to suppress blank-out. Those Os exhibiting a high alpha index were more susceptible to blank-out than those exhibiting a low percentage of alpha activity. During uniform stimulation, reports of blank-out were associated with bursts of alpha activity.

9:30. Effects of "dependency contrast" in the surface microstructures on target detection and recognition. E. RAE HARCUM, University of Michigan.

Experimental surfaces were constructed from matrices of black and white cells in which the cell brightness was determined by the brightness of the cell immediately preceding it in an arbitrary orderly sequence across the matrix. For three experimental surfaces, subsequent cells were different in brightness 50%, 75%; or 100% of the time. Eight target forms cut out from samples of these surfaces were presented against backgrounds composed of these surfaces. Results confirmed the hypothesis that target detection and recognition is directly related to the "dependency contrast" between the dependency within the target and that in the background.

Division 5. Symposium: Multivariate Analysis of Repeated Measurements on the Same Individual

9:00-10:50. Pan American Room, Mayflower
WAYNE H. HOLTZMAN, Chairman

Participants: RAYMOND B. CATTELL, LOUIS J. MORAN, ROY B. MEFFERD, AND FRED L. DEMARIN, JR.

Discussants: Joseph Zubin, H. Eugene King, and T. W. Anderson, Jr.

Division 5 and Psychometric Society. Applied Psychometrics

9:00-9:50. Cabinet Room, Mayflower Roger Shepard, Chairman

9:00. The maximum likelihood solution for the estimation of absolute sensory thresholds. R. Darrell Bock, University of North Carolina. When paired samples are used to test sensory discrimination, some correct identifications of the sample containing the stimulus occur by chance. If order and position of the stimulus are randomized, the nonchance proportion of correct judgments is estimated by the usual correction for guessing in two-alternative tests. Assuming a normal response law, a maximum likelihood estimator of the median sensible stimulus magnitude is derived as a variation on the "probit" method of Finney. The solution employs weights and working deviates incorporating

9:10. Statistical inference and current publication practices in psychology. Theodor D. Sterling, Michigan State University.

the correction for guessing. Tables to facilitate

computation have been prepared. A similar solu-

tion is derived for "triangle tests."

The overwhelming majority of articles published in the fields of experimental, clinical, social, and physiological psychology reject the Null-Hypothesis at $p_0 \le .05$. It is reasonable to suppose that this peculiar aspect of published psychological research indicates a decision process contributing to the selection of research results for publication. In exploring the bias introduced by this selection process, it is found as a surprising result that his manner of selection changes the *rank of certainty* for inferences drawn by the original investigator and tends to vitiate the statistical treatment indicated by the particular article and relevant to the individual instance of research.

Some properties of rank correlation coefficients. J. E. Keith Smith, Massachusetts Institute of Technology.

Present texts fail to make the distinction between rank tests of independence and tests for zero index. This distinction is made clear by the discussion of the distribution of sample values of Kendall's tau when the populations of ranks are not independent. It is shown that the sample estimate of Spearman's index rho is biassed for nonindependent populations and that the bias depends on both the sample size and the difference between rho and tau, while the sample estimate of Kendall's tau is unbiassed. It is

also shown that tabulation of the sample in terms of all subsets of three observations provides the data necessary to obtain an unbiassed estimate of rho, as well as an unbiassed estimate of the variance of sample tau, whatever the population. The application of this sort of analysis to the problem of nonlinear association between ranks is discussed.

9:30. Statistical inferences about true scores. Frederic M. Lord, Educational Testing Service.

It is shown how unbiased estimators may be computed for any moment of the frequency distribution of the true scores on an objective test. From these moments, the shape of the distribution of true scores can be estimated and a least-squares estimate computed for the true score of each examinee. Linear regression of true score on obtained score need not be assumed, as has been usually done, nor normality of the errors of measurement. The shape of the joint distribution of true scores and of errors of measurement can also be inferred by this method.

Division 14. Paper Reading V

9:00-9:50. New York Room, Statler IRVING R. WESCHLER, Chairman

9:00. An experimental and statistical analysis of troubleshooting strategy. Neil D. Warren and James S. Ford, University of Southern California and Psychological Services, Inc.

Subjects were trained in problem-solving strategies in an abstract troubleshooting context. Achievement following different amounts of training was measured by both performance and written tests and was correlated with specific ability tests. Analysis of variance indicated that efficient application of troubleshooting strategies is a function of both training and particular mental abilities. Factor analysis indicated evaluative reasoning as a particularly important factor in the logically efficient application of problem-solving strategies. Speed of performance was essentially independent of logical efficiency of performance and of the various mental ability measures employed.

9:15. The development of a forced-choice diagnostic scale for measuring training needs of first line supervisors. DARRELL E. ROACH.

In a previous study 328 statements, descriptive of supervisory behavior were subjected to a modified centroid factor analysis. These statements with known factor loadings were used to develop a forced-choice diagnostic scale for evaluating supervisory training needs. These statements were arranged in

doublets by pairing statements with significant loadings on a given factor with statements having significant loadings on the other factors. This resulted in 134 pairs of statements which yield 14 separate scores. Scores are obtained for personal compliance, job knowledge, direction of group performance, rewarding performance and thoroughness of employee evaluation, company loyalty, acceptance of responsibility, group spirit, impartiality, poise, consideration, open mindedness, cheerfulness, and approachability. The results of a survey of training needs, use of the scales, reliability, and validity are discussed.

9:30. Predicting success in supervisory training programs by the use of psychological tests. ROBERT G. NEEL AND ROBERT E. DUNN, University of Kansas City.

Supervisory training programs, even under ideal conditions, are only partially successful. The hypothesis: success in supervisory training programs can be increased by the use of certain tests in the selection of trainees. The tests used were the How Supervise?, the F scale, and the Wonderlic. The goal was to train potential supervisors for understanding the individual, the problems, and in developing a solution. The criterion of success was the numerical grade consisting of objective tests and case analysis. The data indicate that the How Supervise? Test and the F scale were good predictors of success.

Division 19. Summarized Research Papers: II. Personnel Research

9:00-9:50. Pan American Room, Statler EDWARD A. RUNDQUIST, Chairman

9:00. Agreement among "experts" on evaluation of human relations items. Aaron J. Spector, J. Howard Bryant, and Russell A. Clark, U.S. Naval Personnel Research Field Activity.

The basic question involves the agreement among various kinds of experts with regard to their evaluations of the importance of certain kinds of human relations behavior. The subjects were 8 officers, 10 human relations authorities, 17 executives, and 8 educators. Each judge assigned weights to four alternatives for 105 items. Rank order analyses showed: significant agreement within all groups, that within group agreement differed significantly from group to group, significant agreement between all groups, and that between group agreements are about as high as the within group agreements. Analyses of absolute weights, however, show appreciable group differences.

9:05. Types of supervisors and associated attitudes of subordinates. J. Howard Bryant, Russell A. Clark and Aaron J. Spector, U. S. Naval Personnel Research Field Activity.

The basic aim of this research was to relate "types" of chief petty officers (CPOs) to the attitudes of their subordinates. Attitudes of enlisted men toward Navy service were measured. Their CPOs were rated on various supervisory characteristics by their fellow CPOs and superior officers. The attitudes were factor analyzed. Both a McQuitty elementary linkage analysis and an inverse factor analysis were performed to obtain "types" of chiefs from the ratings by peers and superiors. The chief "types" are shown to be significantly related to the attitudinal factors. These relationships are discussed in detail.

9:10. Leadership peer ratings related to subsequent proficiency in training and in the fleet, JAMES R. BERKSHIRE AND PAUL D. NELSON, U. S. Naval School of Aviation Medicine.

Rarely have military leadership peer ratings been related to performance after several years. In the present study, leadership peer ratings obtained on 443 naval aviation cadets were related to subsequent performance over as long as a three-year period. For those cadets who are now fleet naval aviators, measures of fleet proficiency were obtained from squadron senior officers. The remainder of the sample was composed of cadets who did not complete flight training. Subsequent success in flight training and fleet performance was conclusively related to high peer ratings obtained as much as three years earlier.

9:15. Selection of classification tests for assignment to combat arms. Abraham H. Birnbaum and Louis P. Willemin, Personnel Research Branch, Department of the Army.

On the basis of validity data from several sources, including Korean combat, three new sets of two-test composites, all approximately equal in validity, were identified as potential improvements over current combat arms selectors. When all Army selector composites were considered, and men were classified in terms of the composite on which each man scored highest, the best match between manpower requirements and availabilities was obtained by replacing the current combat arms selectors with a personality questionnaire plus an arithmetic reasoning test for the Infantry, and ar interest measure plus an automotive information test for the remaining combat branches.

9:20. Validation of early ratings against later ratings in the Army's combat arms selection studies. Louis P. Willemin and E. Kenneth Karcher, Jr., Personnel Research Branch, Department of the Army.

Studies to improve initial selection for combat jobs found experimental fifth-week buddy ratings of several hundred combat arms assignees correlating above .60 with sixteenth-week criterion ratings and above .50 with fiftieth-week (on-the-job) criterion ratings. These values far exceeded validity coefficients of the tests. The two criteria correlated around .70. Odd-even rater correlations indicated high reliability of rating averages (over .80), and small validity loss (only .02) when rater overlap between predictor ratings and criterion ratings was eliminated. These results suggest the accuracy of early buddy judgments and their possible value as combat arms selectors.

9:25. The development and evaluation of on-site training for Nike integrated fire control operators. Myron Woolman, Human Resources Research Office, Washington, D. C.

A method of training inexperienced Nike integrated fire control (IFC) operators on-site was developed and experimentally tested. The experiment involved 24 Nike batteries, six in each of four training methods (N = 424 operators). The four experimental methods were: The Experimental Program, Periodic Evaluation, Experimental Program plus Periodic Evaluation, and Controls (conventional training). Periodic Evaluation consisted of frequent evaluations of operator performance. Operators given the Experimental Program were significantly superior to Controls in both performance (split-half reliability 91) and written test results (split-half reliability 95). Periodic Evaluation offered no significant training benefits.

9:30. On the relationship between electronics maintenance proficiency and the retention of theory oriented electronic information. PAUL G. WHITMORE, JR. AND W. L. WILLIAMS, JR., USAAD Human Research Unit, Fort Bliss, Texas.

A job sample performance test and a written test covering the NIKE AJAX IFC technicians' course were administered to 91 technicians immediately after graduation and to 98 with experience beyond graduation. Performance test scores increased as experience increased while written (theory oriented) test scores decreased. This decrease and the low correlations between written and performance test scores (for both groups) suggest that a portion of course content is irrelevant to the job. A drop in

the electronic aptitude-maintenance proficiency correlation from the inexperienced to the experienced group suggests the need for job validated rather than training validated aptitude measures.

9:35. The prediction of military delinquency. E. K. GUNDERSON, J. D. GRANT, AND K. B. BAL-LARD, U. S. Naval Retraining Command, San Diego, California.

It was hypothesized that measurement of certain social attitudes during recruit screening would have value in predicting future disciplinary difficulties. An inventory which discriminated sharply between confined and nonconfined naval personnel was administered to 20,000 recruits entering recruit training in San Diego. Follow-up data on the service careers of these recruits yielded a control sample and several categories of individuals having disciplinary or psychiatric involvements. By means of a discriminant function analysis, a high degree of separation was obtained between criterion groups (control vs. "offense") using Delinquency Score, GCT, school grade completed, and age.

Division 21. Factors in human performance

9:00-9:50. South American Room, Statler EZRA SAUL, Chairman

9:00. An optimum manual workspace for the seated operator. Theodore L. Stoddard and Wilbert K. Carter, Tufts University. (Sponsor, Edward M. Bennett)

The maximum and minimum limits of human reach capabilities can be defined anthropometrically with considerable precision, but the introduction of endurance factors into the man-machine equation pose new problems, such as the need to reduce physical and psychological stress and to maximize gratification in the performance of required tasks. The solution of these problems lies partly in the development of an optimum desirable workspace for which the present study provides a new body of data. Results show that this optimum desirable workspace is considerably smaller—closer to the operator—in most areas than present extrapolations from maximum dimensions suggest.

9:15. The effect of low frequency, high amplitude whole body vibration on human performance. M. A. Schmitz and A. K. Simons, Bostrom Research Laboratories.

Over 15,000,000 people are daily exposed to low frequency, high amplitude vibrations when driving

work vehicles and when piloting airplanes during low level flight. This study concerns the effect of these typical vehicle vibrations on several aspects of human performance. Ten performance tests were given to five male subjects to ascertain which measures might be sensitive to vibrational effects. A control condition (no vibration) and two vibration conditions were utilized. Results showed trends toward decrements in performance in the following: hand reaction time, body sway, depth perception, visual acuity, tracking, and foot pressure constancy.

9:30. Effect of rate of target presentation on target detection probability. IRWIN POLLACK AND P. ROBERT KNAFF, Air Force Cambridge Research Center, Washington, D. C.

Four experiments attempted to determine whether the rate of target presentation significantly modified target detection probability. In each experiment, 15 observers spent five 90-minute sessions at a visual monitoring task. The target presentation rate varied from 4-1,024 targets per session. As the target presentation rate increased, the target detection probability increased from 42% to 75% for detection of a light increment and increased from 58% to 81% for the change in deflection of a meter scale. It is concluded that insertion of false targets (to increase target presentation rate) may result in significant improvements in visual target detection.

Division 3. Physiological III

10:00-10:50. California Room, Statler

JACK WERBOFF, Chairman

10:00. Effect of lesions of the medial cerebral cortex upon delayed alternation and visual discrimination in the monkey. WILLIAM A. WIL-SON, JR., KARL H. PRIBRAM, AND JANE CON-NORS, Institute of Living, Hartford, Connecticut.

The effects on learning and retention of medial cerebral lesions in monkeys were studied. Hippocampal lesions cause retardation in learning of both delayed alternation and visual discrimination; impairment in retention only of alternation. Lesions of cingulate cortex retard only learning of alternation, not of discrimination, and have no effect on retention. Thus, after lesions of medial cerebral cortex, learning of alternation is most fragile and retention of discrimination most resistant to disturbance. The data support the contention that medial cerebral lesions affect the neural processes important to learning and remembering and not solely those involved in emotion.

10:10. "Positional" vs. "go, no-go" form discriminations by monkeys with bitemporal lesions. Pedro Pasik, Tauba Pasik, William S. Battersby, and Morris B. Bender, Mount Sinai Hospital, New York City.

Six monkeys were tested before and after bitemporal aspirations on two versions of a form discrimination. Identical stimuli were used in both tests, but indicators of the response varied: a "go, no-go" situation being used in one, and a positional (left or right) choice in the other. Despite relative difficulty of task, bitemporal operates performed better on the positional form discrimination where a two-choice response was required for solution. If a single response (go, no-go) were used, these same animals exhibited a deficit. These findings suggest that the latter deficit was due to the responsiveness to the unrewarded stimulus rather than to a "retentive" disorder which others have postulated.

10:20. Visual discrimination impairment after cutting cortical connections between the inferotemporal and striate areas in monkeys. Mortimer Mishkin, National Institute of Mental Health.

Evidence that inferotemporal cortex in monkeys is a focal area serving visual discrimination suggests that this cortical area is closely linked to the primary visual system. That the link may be cortical rather than subcortical appears from the fact that marked impairment in discrimination followed sectioning of the corpus callosum in monkeys previously subjected to unilateral inferotemporal and contralateral striate removals. Control monkeys with inferotemporal and ipsilateral striate lesions, or with frontal and contralateral striate lesions, were unimpaired following section of the callosum.

10:30. Delayed response in chimpanzees with prefrontal lesions. H. ENGER ROSVOLD, National Institute of Mental Health.

Four chimpanzees were trained on delayed response and on visual discrimination tests similar to those used in testing monkeys. After prefrontal lobotomy they were retested for retention, retrained if deficits appeared, and in addition tested for post-operative initial learning. Postoperatively, none of the animals performed above chance levels on delayed response tests; visual discrimination was unimpaired. In these respects the chimpanzees were like monkeys. Unlike monkeys, however, the chimpanzees relearned the delayed response tests and were unimpaired in initial learning. Histological analysis indicated that the lesions were as extensive as those which in monkeys produce severe and permanent impairment.

Division 3. Verbal Learning II

10:00-10:50. Ohio Room, Statler
LUCIANO L'ABATE, Chairman

10:00. Effect of number of trials on the language conditioning of meaning. CAROLYN K. STAATS AND ARTHUR W. STAATS, Arizona State College, Tempe.

Recent studies have shown that word meaning functions as a response since it can be classically conditioned. If meaning is an implicit response, however, then intensity of conditioned meaning should increase with the number of conditioning trials. Using the method of conditioning meaning employed in the earlier studies, different groups of Ss were run with 0, 2, 4, 6, 8, 10, 12, 14, 16, or 18 conditioning trials, with two nonsense syllables as CSs. Positive evaluative meaning was conditioned to one syllable, negative evaluative meaning to the other. It was concluded that the intensity of meaning, as measured on a semantic differential scale, increased with greater number of conditioning trials.

10:10. Serial rote overlearning without beneficial effects on retention. EUGENE EISMAN AND MARI RIESS, University of California, Riverside.

Probability (relative frequency correct) as an index loses sensitivity in all-or-none response situations as ${}_{*}E_{r}$ grows and may become 1.00 before ${}_{*}E_{r}$ reaches asymptote. The purported advantage in retention attributed to overlearning may be a spurious function of this insensitivity. Using a more accurate index, it was hypothesized that no advantage would result from overlearning as compared with just-learning a list of words. A serial learning task, in which the criterion was tied to a more sensitive index, was studied. The results indicated that, when learning is complete, there is no advantage in overlearning.

10:20. "Non-continuity" in human rote learning. ROBERT C. BOLLES, Princeton University.

Serial anticipation learning was found to be unimpaired when the serial order of syllables in the middle of the list was altered one-third of the way through the course of learning. This finding suggests that nothing is learned about the S-R sequences in the middle of the list until after the beginning and end of the list have been learned.

 Retention of connected discourse as a function of number of repetitions. Norman J. Sla-MECKA, University of Vermont. (Sponsor, Bennet B. Murdock, Jr.) This paper reports experiments upon the effect of degree of learning of an original passage and an interpolated passage, of connected discourse, upon recall of the original. The first experiment involved 1, 3, 5, 6, 7, and 9 repetitions of the original passage. Results confirmed the hypothesis that recall is positively related to number of repetitions. The second experiment involved 0, 1, 3, 5, and 7 repetitions of the interpolated passage. Results confirmed the hypothesis that recall is negatively related to number of interpolated repetitions.

 Recall of a verbal item after one presentation. LLOYD R. PETERSON AND MARGARET JEAN PETERSON, Indiana University.

Hull made extensive use of the concept of stimulus trace in deriving verbal learning effects. However, he quantified it from eyelid conditioning data. The present study investigated the aftereffects of verbal stimulation by testing recall of individual consonant syllables after a single, brief auditory presentation. Intervals before signal for recall varied from 3 to 18 seconds with different syllables. A counting task occupied the subject during the interval. Proportion recalled was found to decrease rapidly as a function of time. Latencies of correct responses were relatively long. A reinterpretation of the concept of verbal stimulus trace is suggested.

Division 5. Scaling Techniques

10:00-10:50. Cabinet Room, Mayflower DAVID V. TIEDEMAN, Chairman

10:00. A nonparametric method of item and test scaling. M. P. BRYDEN, McGill University. (Sponsor, Wallace E. Lambert)

In order to determine item and test scalability, the use of a nonparametric statistic originally developed by Long in 1932 is suggested. Previous objections to this statistic have been based on two facts: the sampling distribution has not been known, and there was no correction for ties. These objections have been overcome. The use of this statistic is particularly advantageous since it makes use of virtually all the information provided by the answer pattern. Its value in determining both item and test scalability is shown.

10:10. A problem in ratio scaling. ROBERT F. BOLDT, Personnel Research Branch, Department of the Army.

Multidimensional scaling has been used under the assumption of an Euclidean space. It is possible to test this assumption when actio scaling methods are

used by computing a scalar product matrix and examining its latent roots. These roots must be all positive or zero to be consistent with the Euclidean distance function. Experiments were conducted using paired comparisons, successive intervals, and graphic rating ratio scaling methods. All experiments gave scalar product matrices with sizeable negative latent roots. Therefore the scale values are not interpretable as interpoint distances in Euclidean space.

10:20. Measuring affective states by means of Thurstone scaling techniques. ROBERT H. KERLE AND HILTON M. BIALEK, Human Resources Research Office, California.

A persistent problem in field research is the measurement of Ss' perception of their own reactions or feelings. In innumerable situations, especially in stress and frustration experiments, this response is highly desirable and is usually accomplished either by a simple check list or by asking S to verbally recollect after the experiment is completed. As a result, experimenters have been unable to derive measures of this response which would meet the criteria of objective measurement. The unique application of Thurstone scaling techniques to this problem have shown, empirically, the possibility of obtaining valid and reliable measures of affect which are amenable to conventional statistical manipulations.

10:30. The relationship between two methods for scaling pair comparison data. Joseph L. Zinnes, University of Michigan.

Recently two papers, one by Duncan Luce and the other by L. R. Ford, Jr., have attempted to obtain one dimensional scales from pair comparison data. What makes these two papers mutually enlightening is that they approach the problem from what seems to be opposite directions. It is shown that both methods coincide under certain restrictive conditions and that, under certain more general conditions, Ford's method may be regarded as a reasonable extension of Luce's. Since Ford's method is not generally known to psychologists, certain of its features, that make it more desirable than many conventional scaling methods, are pointed out.

Division 14. Symposium: Management Selection Research

10:00-11:50. South American Room, Statler THOMAS W. HARRELL, Chairman

Participants: Francis Bradshaw, Thomas W. Harrell, Ludwig Huttner, Renato Tagiuri, and Lewis B. Ward.

Division 19. Symposium: Isolation and Sensory Deprivation

10:00-11:50. Federal Room, Statler
RICHARD TRUMBULL, Chairman

Participants: Jerrold L. Wheaton, Jack A. Vernon, David McK. Rioch, Thomas I. Myers, and Philip Solomon.

Division 21. Symposium: The Analogue Computer as a Tool in Engineering Psychology

FRANKLIN V. TAYLOR, Chairman

10:00-11:50. Pan American Room, Statler

Participants: Fred A. Brooks, Jr., John Senders, Henry P. Birmingham, and Stanley N. Roscoe.

Division 1. Symposium: Emotions, Drive, and Psychophysiological Measurement

11:00-1:50. Congressional Room, Statler RICHARD S. LAZARUS, Chairman

Participants:

ALBERT F. Ax. Psychophysiological methodology in an interdisciplinary psychiatric setting.

CHARLES W. ERIKSEN. Unconscious generalization of anxiety.

RICHARD S. LAZARUS. Stress, personality, and psychophysiology.

ROBERT B. Malmo. Measurement of drive: An unsolved problem in psychology.

Division 3. Animal Learning III

11:00-11:50. California Room, Statler LEON J. KAMIN, Chairman

11:00. Stimulus generalization along the dimensions of angular orientation and wave length.

CHARLES M. BUTTER AND NORMAN GUTTMAN,

Duke University.

Pigeons (N=10) were trained to peck at a key illuminated by a narrow vertical band of light of 550 m μ wave length. Subjects were then tested for stimulus generalization along the dimensions of angular orientation of the band on the key and the wave length of the light which illuminated the band. Averaged generalization gradients along one dimension are, for different values of the second dimension, multiplicatively related. On the basis of this relationship, response rates to stimuli varied in two dimensions are predicted with a high degree of accuracy by combining response rates to stimuli varied in one dimension.

11:10. Resistance to extinction as a function of reinforcement schedules in a Skinner box for humans. Carl D. Williams, Robert N. Dorsey, John T. Hammack, and Susan G. Foster, University of Miami.

Ninety-six female college freshmen were randomly assigned to one of three reinforcement schedules for 6, 11, 16, or 21 reinforcements. They received either a penny or a nickel for inserting a marble in a hole in a metal box after instructions to obtain as much "treasure" as possible. The reinforcement schedules were: regular, fixed ratio (4:1), and variable ratio. Significant differences in the number of responses to extinction were found for the reinforcement schedules but not for value of reward or number of reinforcements.

11:20. The effect of range of variation in reward magnitude upon acquisition and extinction of an instrumental response, EILEEN M. BEIER, Yale University.

The same mean reward was given in four ranges of variation of two equally likely magnitude values, including constant and partial reinforcement as extremes. Terminal acquisition running speed of rats was inversely related to range of variation in reward. The larger reward's incentive effect showed some extinction during acquisition trials. Rate of decrement in speed during extinction trials was inversely related to range of variation of reward in acquisition. From control evidence, it appears unlikely that the extinction rate is dependent solely upon difference in reward between acquisition and extinction conditions. Theoretical implications will be discussed.

11:30. On some properties of visual reinforcement. GERALD W. BARNES AND GEORGE BELA KISH, University of Maine.

In order to determine whether light reinforcement affects response rate by increasing general activity or by directly reinforcing that response, mice were tested in a Skinner box containing two levers. Experimental Ss could produce light onset by contacting one lever but not the other. Control Ss could never produce light. The data did not show an increase in overall activity since response rate increased only on the one lever which produced light onset. The cumulative response data clearly resembled the operant level, acquisition, and extinction curves produced when food is used as reinforcer. The data are interpreted as most favorable toward a reinforcement hypothesis.

Division 3. Knowledge of Results

11:00-11:50. Ohio Room, Statler REED LAWSON, Chairman

11:00. The effect of precision, delay, and schedule of knowledge of results on performance. F. J. McGuigan, Hollins College.

This experiment used a $3 \times 3 \times 3$ factorial design to evaluate the above variables, to study performance when information is removed, and to evaluate their linear, cubic, and quadratic components. Among the results for learning trials were: The 27 knowledge groups were superior during learning and extinction to a no-knowledge group; variation of precision and schedule affected performance, but delay did not; performance decreased when information was removed; significant linear and quadratic interactions of schedule with trials, and a significant cubic interaction of precision with trials, were found. A similar analysis was conducted for extinction trials.

11:10. Delay of knowledge of results before and after a response. Frances Crockett, F. J. Mc-Guigan, and Carolyn Bolton, Hollins College.

Lengths of time that knowledge of results antedates and follows a line drawing task were varied using a 2 × 2 factorial design. The results showed: knowledge of results furnished immediately after a response is superior to information provided 20 sec. after a response, variation of the length of time that knowledge of results antedates a response does not affect performance, the differences between knowledge of results before and after a response do not approach significance, the superiority of training under immediate knowledge of results following a response is lost when knowledge of results is removed.

11:20. The influence of amount of information on learning and performance in a recognition task. MARTHA A. TAYLOR AND ROBERT TEGHTSOON-IAN, Harvard University. (Sponsor, George A. Miller)

The influence of amount of information on recognition was studied. Subjects were tested for their ability to recognize a previously seen three-digit number in a set of n alternatives. Two trials were given with 12 sets of alternatives in each, with n equal to 4 or 16. A transfer design was employed covering the four permutations of n over trials. The results indicate that the amount of information per item does not influence the amount learned but is inversely related to the level of performance.

11:30. The influence of visual noise on tracking performance. WILLIAM C. HOWELL AND GEORGE E. BRIGGS, Ohio State University.

The discrimination of auditory signals from noise has been studied with respect to a number of signal and noise parameters. Analogous filtering of visual noise has commanded less attention, research in this area being limited primarily to static displays. This study was designed to determine the ability of S to perform tracking tasks when the stimulus, the feedback, both the stimulus and feedback, or the error information is selectively obscured by the addition of noise. Results indicate that performance is influenced by noise locus as well as by the signal-to-noise ratio and by the complexity of the task to which noise is added.

WEDNESDAY AFTERNOON, SEPTEMBER 3

Division 14. Paper Reading VI

12:00-12:50. New York Room, Statler
LAURENCE SIEGEL, Chairman

12:00. A controlled experiment in advertising scheduling. H. Zielske and E. Pomerance, Foote, Cone & Belding. (Sponsor, J. Peterman)
For two extremes in scheduling 13 advertising exposures—weekly, and four-week, intervals—rates at which consumers were made to remember and at which they forgot were measured. Logarithmic curves provided a good fit for both the learning and forgetting data. It was found that rate of forgetting decreases as number of exposures increases. Maxi-

mum number recalling was 31% greater with weekly than with four-week exposures. Average weekly recall for the 52-week period studied was 38% greater with exposures at four-week intervals than at weekly intervals.

12:25. A visual perception laboratory in commercial research. HARRY WALLER DANIELS, National Analysts, Philadelphia, Pennsylvania.

The underlying psychological process of advertising and its relationship to buying behavior are discussed. Stressed is importance of visual perception. Immediate attention value is measured by a modified stereoscope called the Stereo-Rater. It is described and the theoretical basis for its use is discussed. Data supporting its value are presented from a study. In addition another instrument, the Visuo-Value Rater, is described and discussed, and three illustrations of its use are covered.

Division 19. Symposium: Systems Simulation in RAND's Logistic Systems Laboratory

12:00-1:50. Pan American Room, Statler

WILLIAM W. HAYTHORN, Chairman

Participants: WILLIAM McGLOTHLIN, RICHARD BEV-ERLY, AND WILLIAM W. HAYTHORN.

Discussant: S. B. Sells.

Division 21. Continuous Control Systems

12:00-12:50. Federal Room, Statler

JEROME H. ELY, Chairman

12:00. The effects of marker size and control display ratio on speed and accuracy of radar target acquisition with operators using rolling ball control. J. Robert Newman and Herman T. Brown, Jr., Hughes Aircraft Company.

This study investigated radar target acquisition performance as a function of marker size and control display ratio with operators using a rolling ball control. The results were (a) errors increased as a function of increased marker size for all CDRs; (b) for the smallest marker size, the errors increased as a function of increase in CDR; but for two larger MSs, the error was smallest for the medium control display ratio; (c) speed scores were also significantly different for MSs but not for CDRs. The results are interpreted within a probability model that fitted the error data closely. The problem of predicting operator performance in terms of error and speed scores is discussed.

12:15. Instrumentation for continuous control.

CHARLES R. KELLEY, Dunlap and Associates,
Stamford, Connecticut.

Those planning instrumentation for higher order continuous manual control tasks have too often dealt with individual indicators rather than systems and have used legibility studies of static indicator faces as a guide for designing displays with time-varying signals. Designers of automatic control systems are forced to approach the problem of control from a system basis. This approach can be usefully extended to the design of instruments for manual control. Analysis of a manual control problem from a system standpoint can lead to specifications as to the location, type, shape, and scaling of principle indicators. It also permits a rational choice among varieties of quickening, and other methods of simplifying the operator's task.

12:30. Human gain in compensatory tracking systems. James Sweeney, Anna Graham, Susan Pyeatt, and Henry Birmingham, U. S. Naval Research Laboratory.

Effective system design requires knowledge of component characteristics. Where a human operator is a system element, his gain is dependent upon the characteristics of the loop around him thus requiring closed loop gain measurement. The gain of the human operator was measured for six conditions of control dynamics while system gain was held constant. The results show decreased operator gain as system order increases, but that quickening of a third order system improves gain by as much as 30 db.

Division 1. Theoretical Papers

1:00-2:50. New York Room, Statler
DAVID LABERGE, Chairman

Participants:

HARRY J. JERISON. The empirical model for human vigilance.

S. S. STEVENS. Ratio scales of psychological magnitude and their cross-modality validation.

J. ROBERT NEWMAN. The discovery and exploration of response surfaces: A consideration of the box method of experimentation in psychological research.

Division 3. Avoidance

1:00-1:50. California Room, Statler LARRY STEIN, Chairman

1:00. The effects of heat narcosis on the retention of a conditioned avoidance response in goldfish. LEON S. OTIS AND JEAN A. CERF, Johns Hopkins University and University of Brussels.

The electrical activity of the brain of poikilotherms may be momentarily suppressed by heat narcosis. Heat narcosis was induced in goldfish aversively conditioned to avoid the (preferred) darker of two chambers of a fish tank immediately after, 15 minutes after, one hour, or four hours after the final of 10 learning trials. A control group received non-narcotizing heat immediately after learning, and another group, no treatment. The immediate and 15-minute groups showed little or no retention. All other groups showed "normal" retention as compared with the nontreated controls. Retention was positively correlated with the interval between learning and heat narcosis.

1:10. The effects on avoidance performance of varying rate and direction of conditioned stimulus change. Marvin Schwartz and James E. Goodson, U. S. Naval School of Aviation Medicine.

It has been reported an on-going CS is more effective for avoidance responding than an off-going CS. This experiment further tests the effects of direction of CS change and tests for interaction between rate and direction of CS change. Rats were employed as Ss. The CS was an on- or off-going light, and it changed fast or slow. All Ss reached 80% avoidance responding during training. During extinction they were split according to a factorial design. It was concluded that avoidance performance is independent of direction of CS change, and rate and direction of change probably do not interact.

1:20. Acquisition of avoidance behavior as a function of shock intensity, using a trace conditioning procedure. C. Glenn Davis, D. G. Mook, and F. R. Brush, University of Maryland.

Response termination of the CS has been suggested as a factor minimizing the effects of other variables (e.g., shock intensity) on avoidance. A trace procedure may be more sensitive to differential effects of intensity. 5 groups of 6 rats were given 5 daily sessions of 20 trials each, in a modified shuttlebox, with the following shock intensities: .1, .2, .4, .8, and 1.6 ma. Total avoidances and number of animals learning were inverted U-shaped functions of shock intensity; the decrement at higher intensities may be attributed to failure of generalization and/or interfering responses to strong fear.

 The "Kamin effect" in avoidance conditioning. M. RAY DENNY, Michigan State University.

Three of the retention interval groups—zero, 1-hr., and 24-hr.—and other details except for shorter shuttlebox were the same as in Kamin's study. Another group of rats 23 hr. after the first 25 training trials was shocked, without buzzer (CS) and in a different box, as often as during the first 25 trials and tested one hr. later. A preshocked control was tested 24 hr. later. Inhibition was present in the 1-hr. group as in Kamin's study but not in females until shock was slightly increased. The 23-hr. preshocked group showed inhibition on test trials whereas the controls did not.

Division 3. Receptor Processes

1:00-1:50. Ohio Room, Statler

R. L. DEVALOIS, Chairman

1:00. Chromatic and short-term dark adaptation of the human electroretinogram. John C. Armington, Walter Reed Army Institute of Research.

In a study of chromatic adaptation, the human electroretinogram was elicited at an early stage of dark adaptation following preadaptation to colored light. This procedure permitted a study of spectral sensitivity of the A as well as the B wave components. The strong adaptation effects for the B wave were found to be consistent with previous investigations. However, the spectral sensitivities of the A and B waves were not always the same, and for some colors of adaptation the A wave appeared to be chiefly photopic while the B wave was scotopic.

1:10. The effect of sucrose upon the perceived intensity of salt and bitter. Joe Kamenetzky and Francis J. Pilgrim, Quartermaster Food and Container Institute.

Two independent experiments were conducted to determine how the presence of various concentrations of a sweet stimulus (sucrose) affects the perceived intensity of supraliminal concentrations of each of two other stimuli, salt and caffeine. There was no evidence that sucrose affected the perception of even strong concentrations of salt, but it did significantly decrease the perceived intensity of caffeine. The depression of the bitter was related both linearly and quadratically to the log-concentration of the sucrose. Judges disagreed more among themselves in the case of bitter solutions. Implications of the results and method are discussed.

1:20. Changes in detection threshold as function of the frequency of photic stimulation. W. CRAWFORD CLARK, University of Michigan.

Detection thresholds to photic stimuli were obtained by the method of constant stimuli involving a temporal forced-choice. The circular target subtended 18 minutes at the fovea. The double-pulse study showed that up to a pulse separation of 0.017 seconds the threshold remains constant and equal to a single pulse of twice the duration. Beyond this "Bunsen-Roscoe region" the threshold increases until finally the pulses behave as statistically independent events. The multiple-pulse study demonstrated that all high frequencies had the same detection threshold. For lower frequencies the threshold decreases until interrupted pulses are easier to detect than equivalent continuous pulses. A relationship was found between these detection thresholds and the CFF.

1:30. Mach bands and retinal interaction. WERNER J. KOPPITZ, Ohio State University.

Provided that exposure time of stimulus and area of the visual field are kept constant, brightness discrimination yields a higher brightness increment ΔI for a field with high total illumination and a smaller ΔI for a field with lower total illumination. Under special conditions brightness discrimination upon a background of Mach bands yields the reverse result. The field with the higher total illumination—a bright single Mach band as background—furnishes the smaller ΔI , while the field with the lower illumination—two Mach bands superimposed—furnishes the higher ΔI . The results are interpreted in terms of retinal interaction.

Division 14. Symposium: Operations Research and Industrial Psychology

1:00-2:50. Ballroom, Statler

RAYMOND A. KATZELL, Chairman

Participants:

RICHARD S. BARRETT. Nature of operations research.

JEROME H. ELY. Application of operations research.

Frank J. Harris. The psychologist in operations research programs.

Division 21. Symposium: Training of Engineering Psychologists for Industry

NEIL D. WARREN, Chairman

1:00-2:50. Federal Room, Statler

Participants: Richard Robins, John Lyman, Jesse Orlansky, and David B. Learner.

Division 1. Symposium: Intraorganismic Norms and the Organization of Behavior

2:00-4:50. Congressional Room, Statler

WILLIAM BEVAN, Chairman

Participants:

HARRY HELSON. Modes of behavior in search of a theory.

ISAAC BEHAR. The problem of relevance in the anchoring of psychophysical judgments.

WILLIAM BEVAN AND ROBERT E. ADAMSON. A reconceptualization of reinforcement.

ROBERT R. BLAKE. Adaptation-level theory applied to social action situations.

O. J. HARVEY. Reactions to opinion discrepancies as a function of attitude toward source, magnitude of discrepancy, and personality of the recipient.

SANFORD GOLDSTONE, WILLIAM K. BOARDMAN, AND WILLIAM T. LHAMON. The new psychophysics, perception, and psychopathology.

Division 3. Animal Learning IV

2:00-2:50. California Room, Statler

GERALD W. BARNES, Chairman

2:00. The delay of punishment gradient. Leon J. Kamin, McMaster University.

This study is concerned with the effects of varying the interval between a learned response and punishment. The Ss were 98 hooded rats given shuttlebox avoidance training to a criterion. The Ss were divided into groups, and resistance to extinction of the avoidance response was tested with punishment (shock) after delays of from 0 to 40 sec., or without punishment. The inhibitory effect of punishment was a declining monotonic function of delay, suggesting that punishment acts in a manner formally analagous to reward. The no-punishment group, however, made more responses than did groups with very long delays, indicating nonspecific, "emotional" effects of punishment.

2:10. Response shift and alternation of hungry rats subsequent to forced, nonrewarded maze trials. Duane M. Rumbaugh and James L. Fozard, San Diego State College.

This study relates the effects of number of forced training trials to one side of a Y maze, degree of hunger during training and test, and amount of time intervening between training and test on response shift and response alternation in rats. All trials were administered without food reward. Highest response shift (94%) occurred in the group with the shortest time elapse (6 min.) between training and test. Lower, but still significant, response shift (69%) occurred with the longest time elapse (22 hr.) in the group with the greatest (8) number of training trials. The findings are related to the theories of Glanzer, Montgomery, and Hull.

2:20. The effect of shock on the rat's choice of a path of food. THOMAS F. LOHR, Muhlenberg College.

Rats were allowed to select either of two equivalent paths to a single goal box. Beginning with the first free-choice trial, shock was delivered for right turns in one group and for left turns in another group. Shock intensity began at subthreshold level and was increased to considerable severity in the course of 500 trials. The majority of rats established a preference for the shock turn, and these rats showed a significantly greater stability than nonshock controls. It is felt that these results are relevent to the interpretation of the facilitating effect of punishment for correct responses in discrimination learning.

2:30. The role of preparatory responses in determining relative effectiveness of immediate vs. delayed punishment. Charles C. Perkins, Jr., Robert K. Knapp, and Richard H. Kause, Kent State University.

Twelve rats ran a single choice point maze with food reward delayed 45 sec. on every trial. One response was followed by immediate shock, the other by shock delayed 30 sec. Ss acquired a significant preference for the immediate shock. In a second experiment, ten Ss received food delayed 180 sec. for either turn. Shock preceded by signals in one arm and followed by signals in the other intervened between response and reward. Every S "preferred" signal-shock. The results suggest that the punishing effect of shock may be decreased by preparatory responses but is unaffected by delay as such.

Division 3. Work

2:00-2:50. Ohio Room, Statler

F. J. McGuigan, Chairman

2:00. An electromyographic study of muscular impairment. Robert G. Eason, Navy Electronics Laboratory.

A study was made of the effects of varying levels of sustained muscular contraction on the EMG, and whether resulting impairment is primarily local, general, or both. Degree and order (right or left hand) of contraction and rest interval between contractions were varied. Six measures of EMG activity were derived, all of which were associated with degree and duration of sustained contraction and two of which reflected local and general impairment effects. Impairment resulting from sustained contractions is primarily localized, but there is a general effect. As impairment increases during a sustained contraction additional motor units are recruited.

2:10. The maintenance of observing behavior under different schedules of irrelevant stimulation. REED LAWSON, Ohio State University.

Can changes in stimulation that are definitely irrelevant to Ss' task reinforce Ss' behavior? Six students monitored an "instrument gauge," trying to detect when the gauge indicator appeared in one, easily discriminated position. This event always occurred on every 80th observing response. The experimental variable was the indicator's activity between relevant (rewarding) movements; there was either continuous random variation, variable-ratio variation, or no irrelevant variation in the indicator's position. The insignificance of these variations was stressed to Ss. If irrelevant changes in stimulation

are reinforcers, they should follow the laws of scheduling. This was the case: the variable-ratio schedule produced the highest response rate.

2:20. Self-paced work and rest with variations in work load and prior task information. JAMES D. HITT, JR., Human Resources Research Office, Fort Bliss, Texas.

Ss instructed to turn a crank as rapidly as possible were allowed to rest ad libitum. Rate of cranking varied inversely with work load, but durations of self-paced work and rest intervals did not vary, indicating that equal fatigue accrued under the two loads. A group, given prior information about task duration, cranked initially at a faster rate, but later in practice at a slower rate than groups which had prior experience with and information about the task. Over the assigned task, the latter groups' total outputs (revs.) were greater, indicating that performance was paced and effort distributed to minimize fatigue and maximize performance.

2:30. A generalization of Bills' concept of "blocks" to performance lapses in reaction time during sleep loss. Charles F. Gieseking, Harold L. Williams, and Ardie Lubin, Walter Reed Army Institute of Research.

Bills reports that "blocks" increase in frequency and duration during fatigue. Do performance lapses during sleep loss play the same role as Bills' "blocks"? This study indicates that sleep-loss impairment in a two-choice reaction time test is primarily due to "brief sleeps" or "lapses" which increase in frequency and duration with hours of wakefulness thus producing a strong positive skew in the distribution of reaction times. Thus it appears that Bills' concept of "blocks" during fatigue can be generalized to "lapses" during sleep loss.

Division 5. Problems of Score Derivation and Interpretation

2:00-2:50. Cabinet Room, Mayflower ELIZABETH HAGEN, Chairman

2:00. Statistical techniques of scoring multiplechoice items to differentiate criterion groups. HARRY W. CASE AND ROGER STEWART, University of California, Los Angeles.

How can one maximize the usefulness of multiple-choice items to predict a criterion? This question was explored empirically for an attitude survey of 55 items in reference to driving speed habits. One method based on significant chi squares for single item alternatives was more accurate and efficient in

predicting speed classification in a cross-validation group than a method based on successively related criterion subgroups. Both methods, however, yielded several significant differentiations, using the .01 level. When multiple choice items are not readily scalable, these methods can differentiate between criterion groups on relevant variables.

2:10. Balance of cognitive skills as an index of emotional and social characteristics. Ellis Weitzman, Ernest Primoff, and Ruth Myer, American University and U. S. Civil Service Commission, Washington, D. C.

Analysis of tests administered to several hundred job applicants reveals statistically significant relationships between the balance of cognitive skills measured by the California Test of Mental Maturity and several of the personality variables measured by the Guilford Inventory of Factors STDCR and the Guilford-Martin Personnel Inventory. Results of this study point to the real possibility of using mental test data in lieu of personality test data whenever the latter are not feasible. Questions are raised concerning the effects of intellectual balance upon personality structure as well as the influence of social-emotional variables on the acquisition of specific cognitive skills.

2:20. Comparison of thought and memory type of Airmen Proficiency Test items. Joseph Schwarz, Wright Air Development Center, Dayton, Ohio.

Items for Airmen Proficiency Tests were judged by three measurement psychologists as to whether the items were "thought" or "memory" type. The proportion of memory to thought items was greater in the lower level specialist proficiency tests than in the higher level technician-supervisor proficiency tests. There were a significant number of more highly discriminating items among "thought" than among "memory" types.

2:30. A measure of skill at receiving International Morse Code. S. James Goffard, Human Resources Research Office, Washington, D. C.

On the basis of earlier work, an unconventional but more general measure of skill at receiving International Morse Code has been developed. This measure, the speed score, estimates the speed at which a man can get just 90% of the characters correct. From empirically derived tables, a speed score is found for each test. The average of these is used as a measure of skill. This measure has been found useful in making experimental evaluations of programs of code practice material.

Division 19. Symposium: Current Approaches to the Retention of Personnel in the Military Services

2:00-3:50. Pan American Room, Statler George Burgess, Chairman

Participants: Albert S. Glickman, Richard Snyder, and Eli S. Flyer.

Discussant: WILLARD A. KERR.

Division 3. Physiological IV

3:00-3:50. California Room, Statler Neil D. Kent, Chairman

3:00. Fourteen ANS response patterns in man. M. A. Wenger and T. D. Cullen, University of California, Los Angeles.

To test the hypothesis that ANS response patterns are stimulus-bound, mean patterns for 14 male college students were obtained during sleep and under 14 psychological and physical stimulus conditions. Nine physiological variables were recorded, and standardized scores were obtained for each in terms of each subject's maximum change from sleep level. The similarity between patterns to stimulus replication suggests that the results are reliable. Other patterns were not identical, although seven suggested an epinephrine/norepinephrine combined effect. The greatest displacement from both sleep and prestimulus levels occurred under CO₂, hyperventilation, and cold pressor stimulation.

3:10. Further analysis on the effects of amygdalectomy in monkeys on reward determinants of food motivated behavior. Jerome S. Schwartz-Baum, Institute of Living, Hartford, Connecticut.

Under constant stimulus conditions, amygdalectomy reduces change in rate of bar pressing following increased or decreased food reward. The present experiment relates these effects to the stimulus conditions at the time of response. Amygdalectomy was not found to impair conditioning of an increased response rate to a stimulus followed by a more preferred reward, nor was "extinction" affected. Group differences, however, appeared on reconditioning. Effects of amygdalectomy appear to be more concerned with the interrelationship between stimulus and/or reward conditions than with the immediate stimulus or reward conditions per se. Learning and retention processes seem minimally involved.

Some physiological correlates of food deprivation. Bernard T. Engel, Michael Reese Hosbital.

This study reports the effects of 2, 10, 14, and 24 hours of food deprivation on 11 autonomically mediated responses of 17 male human subjects. It was observed that increased food deprivation led to: decreases in pulse pressure which probably were primarily a result of decreases in systolic blood pressure, linear increases of axillary temperature and salivary output, and a linear decrease in respiration rate. It was concluded that: the thermodynamic theory of hunger was not supported; the theory that hunger is characterized by a heightened activity of the cranial branch of the ANS was supported in part, but is inadequate to account for all the observed effects; and the relationship between intensity of hunger and level of autonomic response is not linear.

3:30. The effects of posterior pyriform lesions on emotional behavior. Thomas C. Cadwallader, University of Buffalo.

The emotional behavior of rats with lesions in the posterior pyriform area was compared with that of control operates. There was no difference between the preoperative emotional scores of the experimental and control groups nor between the pre- and postoperative scores of the control group. Postoperative scores of the experimental group were significantly higher than preoperative scores of the same group. During the entire 60 days of the experiment they were also significantly higher than the postoperative scores of the control group. Two comparison animals with septal lesions showed the typical rapid decline in postoperative emotional behavior.

Division 3. Probability Learning

3:00-3:50. Ohio Room, Statler

PATRICK SUPPES, Chairman

3:00. The effect of a no response-no reinforcement alternative on the verbal conditioned response, OWEN E. ROGERS, WILSE B. WEBB, AND THOMAS J. GALLAGHER, U. S. Naval School of Aviation Medicine.

For 120 trials subjects pressed a key if they guessed a light would come on. No response indicated a guess to the contrary. Three partial reinforcement ratios were used. In a full knowledge condition the light would appear or not appear on each trial. In the partial knowledge condition the subjects were told: "If you do not press the key,

you do not find out if you are right or wrong." No differences were found between conditions during training. Significant differences were obtained between reinforcement ratios during training and extinction. The partial knowledge group significantly prolonged extinction.

 Investigation of observing responses in recognition. ARNOLD M. BINDER, Indiana University.

It has been shown that Ss make few errors of recognition when responding to ambiguous stimuli which contain differentiating and nondifferentiating cues. This implies, from the viewpoint of statistical learning theory, that the Ss are selectively observing stimulus elements. This investigation has used the matching between learning and response relative frequencies in recognition situations involving ambiguous cues to test the hypothesis that observing responses occur. Observing responses were not found for the Ss as a whole, but a marked tendency toward cue selectivity was found for the Ss at high learning levels.

3:20. A symmetric uncertainty model of redundancy in printed English. DAN H. CARSON AND WENDELL R. GARNER, Johns Hopkins University.

When people are asked to use information in sequences of letters taken from English text to fill in missing letters, redundancy is usually measured in one direction only. The symmetric uncertainty model enables us to measure redundancy in both directions simultaneously. Theoretical values show that people should have less equivocation in the middle of a sequence than at either end. Also the middle of a short sequence may have less equivocation than either end of a much longer sequence. Subjects follow theoretical values with slight deviations from symmetry and slightly less overall equivocation.

3:30. Probability learning in 1000 trials. WARD EDWARDS, University of Michigan.

Probability learning experiments and stochastic learning theories have supported the probability matching generalization: asymptotic probability of choice equals probability of reward. Many experiments suggest instead that asymptotic probability of choice is more extreme than probability of reward. Which theory is correct? For 1,000 trials, 120 subjects predicted which of two events would occur. The probabilities used were 0.5, 0.6, and 0.7. The results showed that the asymptotic probabilities of choice were more extreme than the probabilities of

reward whenever the latter were not 0.5. No subject consistently chose the more frequently correct alternative. Conclusion: the probability matching generalization is incorrect.

Division 5 and Psychometric Society. Symposium: Assumptions of Differing Scaling Methods

3:00-4:50. Pan American Room, Mayflower ROBERT P. ABELSON, Chairman

Participants: Harold O. Gulliksen, S. S. Stevens, Clyde H. Coombs, R. Duncan Luce, and Paul Lazarsfeld.

Discussant: WARREN S. TORGERSON.

Division 14. Symposium: Clinical Psychology in Industry

3:00-4:50. Ballroom, Statler

HYMAN MELTZER, Chairman

Participants: STARKE HATHAWAY, HARRY LEVIN-SON, AND GEORGE A. KELLY.

Division 21. Displays and Controls

3:00-3:50. Federal Room, Statler John Karlin, Chairman

3:00. Systematic errors in scale reading as a function of scale numbering and scale orientation. Colin G. McDiarmid and William E. Kappauf, University of Illinois.

Horizontal scales with larger values to the right and vertical scales with larger values at the top were read by 377 college undergraduates. All major scale divisions were 10 units, and all readings were made to the nearest unit. Reading errors of +10, +5, -5, and -10 units were analyzed. Numbering every five units instead of every ten reduced all errors. Displacing the tens numbers just below or just above the tens mark influenced all errors. More positive errors were made on vertical scales than on horizontal, but, overall, more negative errors were made on horizontal scales than on vertical.

3:15. Detection display for a multiple output search system. H. R. EADY AND P. I. ATKINSON, U. S. Navy Electronics Laboratory, San Diego, California.

The increasing area coverage of electronic search systems and accompanying refinements of signal processing have created severe problems of data display for detection monitoring. An experimentally

verified solution to the problem for a system with an output section of 54,000 signal channels is described. This solution was arrived at by analysis of the detection process starting with the operator and working back into the signal processing section. The end result is a 12-channel display subsystem which requires only three detection operators and which maintains the signal discrimination power originally available in any single channel.

3:30. On the relation between numbering preferences and performance on a ten-button keyboard.
WILLIAM A. LEE AND GAY SNODGRASS, Bell Telephone Laboratories.

A test was made of the hypothesis that keying performance would be improved if the keys were numbered according to the preferences or expectations of the operator. Two different spatial configurations of keys were tested: a rectangular and a circular configuration. In each case the operators used two keyboards, one which did and one which did not conform to their numbering preferences. The results indicated that keying performance was affected by numbering pattern, amount of practice, and individual differences, but not by numbering preferences. It was concluded that in general numbering preferences are not valid predictors of keyboard performance.

APA AND DIVISIONAL MEETINGS, PRESIDENTIAL ADDRESSES, AND SOCIAL FUNCTIONS

THURSDAY, AUGUST 28

Division 16 Committee on Research. Research Planning Session

9:00-10:50. Cabinet Room, Mayflower
WILLIAM ITKIN, Chairman

Committee members and other interested persons are invited to participate in the meeting.

Division 12 Ad Hoc Committee on Mental Retardation.

11:00-11:50. Michigan Room, Statler

Division 16 Committee on Reconsideration of Functions of School Psychologists.

12:00-12:50. Cabinet Room, Mayflower Frances A. Mullen, Chairman

Conference of State Psychological Associations.

Business Meeting

1:00-3:50. Ohio Room, Statler

JOHN W. GUSTAD, Chairman

Division 12 Membership Committee.

1:00-1:50. Michigan Room, Statler

MARSHALL R. Jones, Chairman

APA Committee on Mental Health Programs.

2:50-5:50. Room 122, Lee House SAMUEL B. KUTASH, Chairman

Division 13. Business Meeting and Presidential Address

3:00-4:50. North Room, Mayflower

THOMAS W. RICHARDS. The Consulting Function.

Society for Projective Techniques. Business Meeting

5:00-5:50. Pan American Room, Statler

Division 7 Policy and Planning Board. 7:00-8:30. Potomac Room, Mayflower

7:00. Cabinet Room, Mayflower

Division 17 Executive Committee. Meeting

Society for Projective Techniques. Dinner and Presidential Address

7:00. Federal Room, Statler

APA Committee on Relations Between Psychology and Education.

7:30. North Room, Mayflower

T. Ernest Newland, Chairman

Division 12 Outgoing Executive Committee.

Meeting

8:00. Michigan Room, Statler

Division 7 Executive Committee. 8:30-10:00. Potomac Room, Mayflower

FRIDAY, AUGUST 29

APA Council of Representatives. First Session 9:00-4:50. North Room, Mayflower

International Council of Women Psychologists.

Meeting of Board of Directors

9:00-4:50. Room 124, Lee House

Division 16 Committee on Ethics. Standards of Ethical Behavior for School Psychologists

12:00-1:50. New York Room, Statler Bertha M. Luckey, Chairman

Division 18. Business Meeting and Presidential Address

1:00-1:50. Cabinet Room, Mayflower
HAROLD M. HILDRETH, Chairman

Division 16. Presidential Address and Business Meeting

2:00-4:50. Pan American Room, Mayflower
May V. Seagoe. The School in School Psychology.

APA Committee on International Relations in Psychology. Meeting and Coffee Hour with Foreign Psychologists

3:00-4:50. New York Room, Statler ROBERT B. MACLEOD, Chairman Division 7. Presidential Address and Business Meeting

4:00-5:50. Federal Room, Statler

URIE BRONFENBRENNER. Family Structure and Personality Development.

Division 18 and Association of Correctional Psychologists. Business Meeting

4:00-4:50. Cabinet Room, Mayflower
Lowell W. Schenke, Chairman

Division 16. Social Hour

5:00-6:50. APA Lounge, Mayflower

Division 17. Social Hour for Members and Interested Nonmembers

5:00-5:50. APA Lounge, Mayflower

Division 20. Business Meeting

5:00-5:50. California Room, Statler

Division 7. Social Hour

6:00-6:50. APA Lounge, Statler

Division 9. Social Hour

6:00-6:50. APA Lounge, Statler

Division 20. Social Hour for Members and Interested Nonmembers

6:00-7:00. Army and Navy Club, Farragut Square

Division 20. Dinner and Presidential Address

7:30. Army and Navy Club, Farragut Square

NANCY BAYLEY. The Life Span as a Frame of Reference in Psychological Research.

Division 8. Business Meeting and Special Program in Honor of Lise Frenkel-Brunswik

8:00-9:50. Congressional Room, Statler

JEROME S. BRUNER, Chairman

Speakers to be announced. A paper prepared by Else Frenkel-Brunswik shortly before her death will be read.

Division 12. Presidential Address and Business Meeting

8:00. Ballroom, Statler

ANNE Roe, Man's Forgotten Weapon.

Presentation of Annual Awards.

International Council of Women Psychologists.

Meeting of Board of Directors

8:00-10:50. Room 124, Lee House

SATURDAY, AUGUST 30

APA Committee on Communications with High School Teachers.

9:00-12:50. Potomac Room, Mayflower ROBERT H. KNAPP, Chairman

APA Publications Board.

9:00-5:50. Room 122, Lee House Helen Peak, Chairman

Division 2 and International Council of Women Psychologists. Reception, Luncheon, Address, and Business Meeting

12:00-3:50. Chantilly Room, Hamilton

HELEN D. BRAGDON, Chairman

DOROTHEA F. EWERS, President

MARTHA VIDOR, The University, Institute of Education, Liverpool, England. International Cooperative Research.

APA Committee on Health and Accident Insurance.

2:00-4:50. Room 124, Lee House
Benjamin Shimberg, Chairman

Division 9. Business Meeting and Presidential Address

4:00-5:50. Pan American Room, Statler

NEVITT R. SANFORD. Social Science and Social Reform.

Division 12 Incoming Executive Committee.

Meeting

4:00-4:50. Michigan Room, Statler

Division 15. Presidential Address and Business Meeting

4:00-5:50. North Room, Mayflower

T. ERNEST NEWLAND. A Perception of Psychology.

Division 17. Presidential Address and Business Meeting

4:00-5:50. Pan American Room, Mayflower

RALPH F. BERDIE. Counseling Principles and Presumptions.

Division 12. Social Hour

5:00-5:50. APA Lounge, Mayflower

Division 9. Social Hour

6:00-6:50. APA Lounge, Statler

Division 15. Social Hour

6:00-6:50. APA Lounge, Mayflower

MONDAY, SEPTEMBER 1

APA Committee on Retired Psychologists.

9:00-10:50. Room 124, Lee House Donald G. Paterson, Chairman

Division 3 Council. Meeting

10:00-10:50. Potomac Room, Mayflower

APA Education and Training Board. Luncheon Meeting

12:00-1:50. Potomac Room, Mayflower

Division 14. Grandfathers' Luncheon

12:00-1:50. Chinese Room, Mayflower Douglas H. Fryer, Toastmaster

APA and Divisional Program Committee Chairmen. Meeting

1:00-1:50. Michigan Room, Statler

Division 10. Presidential Address, Business Meeting, and Coffee Hour

1:00-3:50. New York Room, Statler

RUDOLF ARNHEIM. The Wooden Saint and the Robin: On the Ontological Status of Art.

APA Council of Editors. Meeting with Editors of Non-APA Journals

2:00-4:50. Room 122, Lee House
M. Brewster Smith, Chairman

Division 2. Presidential Address and Business Meeting

3:00-4:50. North Room, Mayflower

LILLIAN G. PORTENIER. The Teaching of Psychology in a Changing World.

Division 3. Presidential Address and Business Meeting

4:00-5:50. Congressional Room, Statler

JUDSON BROWN. Motivational Variables in Perception.

Division 5. Business Meeting

4:00-5:50. Ohio Room, Statler

Division 19. Presidential Address and Business Meeting

5:00-6:50. Pan American Room, Mayflower

LLOYD G. HUMPHREYS. The Importance of Long-Term Follow-Up Studies in Personnel Research.

Division 5. Social Hour

6:00-6:50. APA Lounge, Statler

Division 5 and Psychometric Society. Dinner and Presidential Address

7:00. Federal Room, Statler

GEORGE K. BENNETT, Chairman

Division 3. Reception

9:00. APA Lounge, Statler

TUESDAY, SEPTEMBER 2

APA Council of Representatives. Second Session 9:00-4:50. North Room, Mayflower

APA Committee on Mental Health Programs.

2:00-5:50. Room 122, Lee House SAMUEL B. KUTASH, Chairman

Psychometric Society Council of Directors. Meeting

2:00-2:50. Potomac Room, Mayflower

Division 14. Business Meeting and Presidential Address

3:00-4:50. Federal Room, Statler

C. H. LAWSHE. Of Management and Men.

Psychometric Society. Annual Meeting and Presidential Address

3:00-4:50. Cabinet Room, Mayflower Frederick Mosteller, President

Division 1. Presidental Address and Meeting of the Executive Committee

4:00-5:50. Pan American Room, Statler

ROBERT W. LEEPER. Organizational Theory as a Possible Meeting Ground for Experimentalists and Personality Psychologists.

Division 14. Social Hour

5:00-6:50. APA Lounge, Statler

Division 19. Social Hour for Members and Interested Nonmembers (Dutch Treat)

5:00-5:50. APA Lounge, Statler

Division 3. Reception

9:00. APA Lounge, Statler

WEDNESDAY, SEPTEMBER 3

Division 21. Business meeting and Presidential Address

4:00-5:50. Federal Room, Statler

PAUL M. FITTS. Engineering Psychology and Systems Research.

GENERAL INFORMATION AND INFORMAL ANNOUNCEMENTS

Time and Place: The Annual Convention will extend from Thursday, August 28, through Wednesday, September 3, 1958. Meetings will be held in the Statler Hotel and the Mayflower Hotel, Washington, D. C. The Statler is located at 16th and K Streets, Northwest; the Mayflower, at Connecticut Avenue and DeSales Street, Northwest. Part of the APA Day program on Sunday, August 31, will be in Constitution Hall at 18th and D Streets, Northwest, within walking distance of either of the headquarters hotels. Washington, D. C. is on Eastern Daylight Saving Time.

Registration: Members are urged to preregister for the convention in order to minimize delay on arrival. Upon arrival, advance registrants will need to indicate merely where they are staying before receiving an envelope with a badge, Convention Guide, and other materials. Member and Nonmember Registration Forms appear at the end of these announcements. Registration will be in the Statler from 9:00 A.M. to 5:00 P.M. each day of the convention. The registration fee for nonmembers is \$2.50.

Room Reservations: The Hotel Reservation Form and hotel reservation information appear at the end of these announcements.

Mail and Directory: A directory of members and guests registered at the convention will be maintained in the Statler. There will be a mail room and a bulletin board. Early registration at the convention will help make the directory more useful.

Tickets for Special Events: Tickets for scheduled special events will be obtainable from the Special Events Desk in the Statler. Tickets may be purchased at this desk up to one hour before the function is scheduled to start. The Special Events Desk will close at 5:00 P.M.

APA Central Office Open House: From August 28 through September 3 (except for APA Day, August 31), between the hours of 10:00 A.M. and 4:00 P.M. each day, the staff members of the APA Central Office invite the members of the APA to visit them at work. Exhibits and charts are being prepared to show the activities of the APA Central Office (16th and O Streets, Northwest).

Psychologists' Wives: A reception will be held for the wives of APA members on APA Day, August 31, from 3:45 to 4:50 P.M. in the Chinese Room of the Mayflower.

Presidential Reception and All APA Dance: The Presidential Reception will be held at 9:15 P.M. on APA Day, August 31, in the Congressional Room of the Statler. The All APA Dance will be held in the Ballroom of the Statler from 9:30 p.m. to 12:30 A.M. Dress is optional; admission is free to those attending the convention.

Information Desk: There will be an Information Desk in the Statler and in the Mayflower from 9:00 A.M. to 5:00 P.M. each day. These desks will have information on room locations and scheduled events. In addition, information will be available about restaurants, local points of interest, recreational facilities, etc.

Exhibits: The exhibits area for all convention exhibits is in the State and East Rooms of the Mayflower. There will be interesting and informative displays well worth visiting.

Convention Lounges: There will be a special APA Lounge in both the Mayflower and the Statler for the convenience of members and guests. The APA Lounges will open at 4:00 P.M. on each day except APA Day. In the Statler, the APA Lounge will be the South American Room; in the Mayflower, the Chinese Room. There will be a bar in each lounge. The divisional social hours listed in the program will be in these APA Lounges.

Placement: The Placement Office will be in the Grand Ballroom of the Mayflower. Except for APA Day, the Placement Office will be open every day from 9:00 A.M. to 5:00 P.M. and on Thursday, August 28, until 9:00 P.M. Applicants seeking employment may preregister with the Placement Office; requests for forms should be sent to the APA Placement Office; 1333 16th St., N.W.; Washington 6, D. C. Employers having position vacancies may use the Position Description Form which appears at the end of these announcements; additional copies of this form are available from the APA Placement Office. Preregistration will facilitate the placement service at the convention for both applicants and employers, as they will be given their Applicant or Position Number at a special desk on arrival in the Placement

Convention Personnel: The Convention Headquarters Room will be the Maryland Room of the Mayflower. Few members realize the extensive contributions of time, energy, and skill made by their colleagues to an APA Annual Convention. Their activities start a long time before the convention and are carried on even after the convention is over. The Chairmen of the convention arrangements committees are:

Convention Manager: Sherman Ross, University of Maryland

Convention Program Chairman: George W. Albee, Western Reserve University

Placement Activities: CAROLE E. BARE, Psychiatric Institute, University of Maryland

Public Information: John L. Finan, Human Resources Research Office, George Washington University

Exhibits: Melvin R. Marks, Personnel Research Branch, The Adjutant General's Office, Department of the Army

Registration: Allen O. Gamble, National Science Foundation

Special Events: ARTHUR R. LANEY, JR., Washington Gas Light Company

Directory and Mail: THOMAS M. MAGOON, University of Maryland

Information Desk: Cecil P. Peck, Veterans Administration Central Office

Signs and Posters: ALLEN R. Solem, University of Maryland

Audio-Visual Services: Curtis E. Tuthill, George Washington University

Coordination of Voluntary Student Help: Helen E.
Peixotto and Walter J. Smith, Catholic University of America

APA Day Functions: DENZEL D. SMITH, Office of Naval Research

Scheduling: LORRAINE BOUTHILET, National Institute of Mental Health

Convention Treasurer: MAX MEENES, Howard University

Location of Headquarters Rooms:

APA Board of Directors: District Room, Second Floor, Mayflower

APA Central Office: Columbia Room, Second Floor, Mayflower

APA Convention Manager: Maryland Room, Second Floor, Mayflower

Central Information Desk: Foyer #2, Mezzanine, Statler

Convention Lounge: Foyer #3 and South American Room, Mezzanine, Statler; Chinese Room, First Floor, Mayflower

Exhibits: State and East Room, First Floor, May-flower

Film Room: Massachusetts Room, Mezzanine, Statler Mail and Directory: Capitol Terrace, Upper Part, Mezzanine, Statler

Placement Office: Grand Ballroom, First Floor, Mayflower

Press Room: Continental Room, Mezzanine, Statler Registration: Check Room and Upper Lobby, Mezzanine, Statler Signs and Posters: Virginia Room, Second Floor, Mayflower

Supplementary Information Desk: Lower Lobby, First Floor, Mayflower

United States Public Health Service: Concord Room, Second Floor, Mayflower

Veterans Administration: Capitol Suite, Second Floor, Mayflower

Voluntary Student Assistants: Virginia Room, Second Floor, Mayflower

Informal Announcements

The events listed here are open to all APA members. Since these events are not part of the official APA Convention Program, the individual named as responsible for each event should be contacted for further information.

Meetings of Chief Psychologists in State Mental Health Programs with psychologists from the National Institute of Mental Health will be held on August 26 and 27 from 9:00 a.m. to 5:00 p.m. Both meetings will be held in Rooms A, B and C at the Stone House, National Institutes of Health, Bethesda, Maryland. Grace Cox and Arthur Bindman are Co-Chairmen.

The Veterans Administration is holding a meeting on August 27 starting at 9:30 a.m. There will be an annual report and discussion from Area Psychology Advisory Councils, special invited addresses, and a panel on current developments. This program will be followed by a social hour. Max Houtchens (Veterans Administration Central Office; Washington 25, D. C.) will provide further detailed information.

A business meeting of the Association for Psychologists in Medical Schools will be held on August 28 in the Ohio Room of the Statler from 11:00 to 11:50 A.M. LOUIS D. COHEN (Duke University; Durham, North Carolina) will provide further information.

A workshop of the Veterans Administration-Vocational Rehabilitation and Education will be held on August 29 in the Administrators' Conference Room, tenth floor, VA Building (Vermont Avenue and H Street, N.W.; Washington, D. C.) from 9:00 a.m. to 4:30 p.m. The workshop will deal with personality dynamics in vocational counseling. The Chairman is Irene Cooperman, and the Consultant is Phil Zlatchin of New York University. For further information in regard to this program, please contact Joseph E. Samler (Veterans Administration; Washington 25, D. C.).

The annual business meeting of the National Council on Psychological Aspects of Disability

will be held from 9:00 to 10:50 a.m. in the Jefferson Room of the Mayflower on August 30. The Chairman is Phyllis Bartelme. For further information on this meeting, please contact James F. Garrett (Office of Vocational Rehabilitation; Washington 25, D. C.).

A meeting of the Veterans Administration-Vocational Rehabilitation and Education Counselors and Guidance Center staff will be held on August 30 from 9:00 to 11:50 a.m. The Chairman is Joseph E. Samler. The meeting room will be announced at the VA-VRE Workshop, August 29.

A reception, luncheon, and business meeting of the International Council of Women Psychologists will be held from 12:00 to 3:50 p.m. in the Chantilly Room of the Hamilton Hotel (14th and K Streets, N.W.; Washington, D. C.) on August 30. Interested members may contact Helen Bragdon (American Association of University Women; 1634 I Street, N.W.; Washington, D. C.) for further information.

The American Catholic Psychological Association has scheduled the following events at the Catholic University on August 30: A luncheon beginning at 12:30 P.M. will be held in the Graduate Hall. At 2:15 P.M. a symposium entitled "Syntheses of Discipline and Permissiveness" will be held in McMahon Hall. The symposium will be followed by a business meeting and a presidential address at 4:30 P.M. in McMahon Hall. The address will be given by Magda B. Arnold. For further details, contact: MARY AMATORA; St. Francis College; Fort Wayne, Indiana.

A social hour of the St. Elizabeth's Psychological Society will be held on August 30 from 5:00 to 6:30 p.m. in the APA Lounge of the Mayflower. ROBERT K. KAHN (St. Elizabeth's Hospital; Washington, D. C.) will provide further information.

The Psi Chi Council meeting has been scheduled for September 1 in the Ohio Room of the Statler from 10:00 A.M. to 12:50 P.M. The Chairman of the meeting is MAX MEENES (Howard University; Washington 1, D. C.).

A meeting of the Society for the Scientific Study of Religion will take place in the South American Room, Statler, from 12:00 to 12:50 P.M. on September 1. Contact Walter H. Clark (Hartford School of Religious Education; Hartford 5, Connecticut) for further details.

Psychologists Employed Full-Time in Industry will hold a meeting from 4:00 to 4:50 P.M. in the

New York Room of the Statler on September 1. A social hour will follow in the APA Lounge of the Statler at 5:00 p.m. For further information, write to W. B. WALKER (11th floor, General Electric Company; 570 Lexington Avenue; New York, New York).

A Columbia University Teachers College social hour will be held starting at 5:00 p.m. on September 1 in the APA Lounge of the Mayflower. Contact ROBERT L. THORNDIKE (Teachers College, Columbia University; New York, New York).

A University of Denver reunion will be held September 1 at 5:00 P.M. in the APA Lounge of the Mayflower. Please contact Donald D. Glad (University of Denver; Denver, Colorado) for further information.

The Johns Hopkins University Alumni will hold a social hour in the APA Lounge of the Statler on September 1 at 6:00 P.M. Please contact W. R. GARNER (Johns Hopkins University; Baltimore, Maryland).

The National Training Laboratories will hold a social hour on September 1 from 6:00 to 6:50 p.m. in the APA Lounge of the Mayflower. Please contact ROBERT C. VANDIVIER (National Training Laboratories, National Educational Association; 1201 16th St., N.W.; Washington, 6, D. C.) for further details.

The Confederate Psychological Association will hold a social meeting starting at 10:00 p.m. on September 1 in the APA Lounge of the Mayflower. Contact Jane Hildreth at the APA Central Office for further information.

On September 2 from 12:00 to 2:50 p.m., Psi Chi will hold a luncheon and business meeting at the YWCA (17th and K Streets, N.W.). For further information, contact MAX MEENES (Howard University; Washington 1, D. C.).

A Spence-Iowa reunion dinner has been scheduled for September 2 from 6:00 to 7:50 p.m. in the Pan American Room of the Mayflower. Please contact Norman Garmezy (Duke University; Durham, North Carolina) for further details.

A conference for Clinical Psychologists on Active Duty with the United States Air Force is scheduled for September 3 at the Officers Club, Bolling Air Force Base, from 9:00 A.M. to 5:00 P.M., followed by a dinner at 6:00 P.M. Interested members may contact S. L. FREUD (Bolling Air Force Base; Washington 25, D. C.).

APA ANNUAL CONVENTION

Forms for registering for the 1958 Annual Convention and for making hotel reservations appear on these pages. The General Arrangements for the convention were given beginning on Page 194 of the April issue of the American Psychologist.

NONMEMBER ADVANCED REGISTRATION FORM

SIXTY-SIXTH ANNUAL CONVENTION OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION

Washington, D. C., August 28-September 3, 1958

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SIXTY-SIXTH ANNUAL CONVENTION OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION

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CURRENT INFORMATION for

Employers and Prospective Employees

The Employment Bulletin of the APA contains a monthly listing of position vacancies, information about programs employing numbers of psychologists, and availability notices of APA members. It is designed for both employers and employees seeking qualified psychologists or appropriate positions. Clinical, academic, industrial and research listings requiring at least 1 year graduate work plus 1 year experience are published by this service. Copies are mailed on the 15th of each month, which means to assure publication in a given month, notices must be received by the 7th of that month.

EMPLOYEE NOTICES: APA members may insert an announcement of their availability by submitting a brief résumé of training and experience on a standard form which will be sent upon request. These notices, for which there is a charge of \$1.00 per insertion, are carried anonymously under box numbers.

EMPLOYER'S NOTE: Notices of position vacancies are listed without charge to non-profit organizations (profit making organizations are charged \$1.00 per notice). Employers who wish to use this service are asked to submit a brief description of the vacancy on standard forms which will be sent upon request. The employer may identify his organization and receive applications directly; or he_may use a box number.

AMERICAN PSYCHOLOGICAL ASSOCIATION

employment bulletin

Volume II

1958

Complimentary copies are sent on request to university departments granting graduate degrees in psychology, and to organizations employing ten or more psychologists.

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Employment Bulletin

American Psychological Association, 1333 16th Street NW, Washington 6, D. C.

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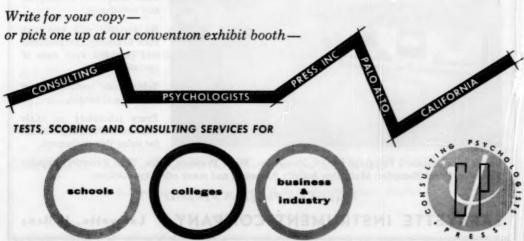
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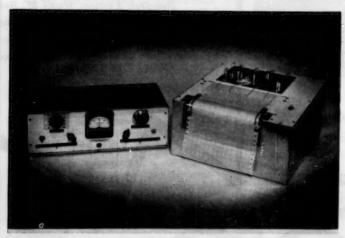
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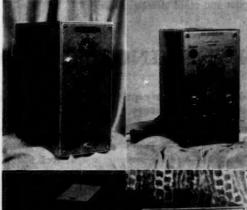
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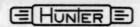
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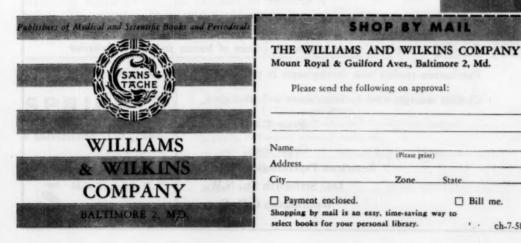
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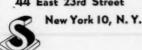
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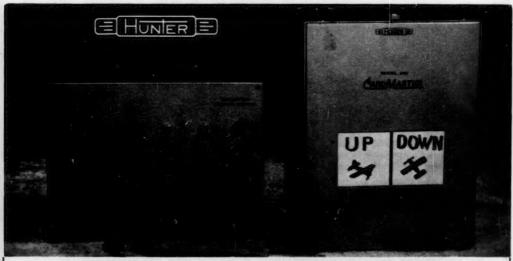
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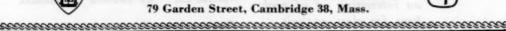
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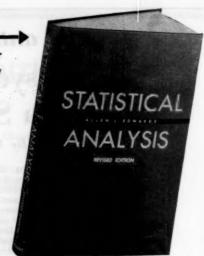
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